

2017-18

English

K.V.R.GOVERNMENT COLLEGE FOR WOMEN,KURNOOL. (AUTONOMOUS)

II B.A SPECIAL ENGLISH SYLLABUS

W.e.f 2017-2018

Part-II, Semester-III ,Paper-III

UNIT-I

1.History Of English Literature :Restoration and Augustan Periods(17th&18th Centuries)

UNIT-II

2.Literary Forms and Terms:

i)Satire ii) Mock-epic iii),Heroic couplet

iv) Epistle v) Heroic tragedy vi) Comedy of manners

vii)Genteel comedy vii)Sentimental comedy viii)Periodical essay

UNIT-III

3.Poetry: Alexander Pope: Extracts from The Rape of the Lock,Canto-1

UNIT-IV

4.Prose: Daniel Defoe: Robinson Crusoe

UNIT-V

5.Drama: William Congreve: The Way of the World.

Recommended Reference Books:

1. A History of English Literature by W.J.Long.
2. A Critical History of English Literature by David Daiches (Published by supernova)
3. The Cambridge History of English Literature by Ward and Waller. (Published by Kessinger)
4. A Glossary of Literary Terms by M.H.Abrams (Published by Cengage)
5. The Penguin Dictionary of Literary Terms and Theory by J.A. Cuddon.(Published by Penguin)

II B.A SPECIAL ENGLISH SYLLABUS

W.e.f 2017-2019

Part-II, Semester-IV ,Paper-IV

UNIT-I

1.History Of English Literature :Romantic and Victorian Periods

UNIT-II

2.Literary Forms and Terms:i). Biography ii) Autobiography iii) Melodrama

iv) Historical novel v)Sentimental novel vi) Gothic novel vii)Regional novel

viii) Flat characters ix) Round characters x) Protagonist xi) Antagonist

UNIT-III

3.Poetry I : John Keats:Ode to a Nightingale

UNIT-IV

4.Prose: Jane Austen: Pride and Prejudice

UNIT-V

5.Poetry 2: Robert Browning : How do I Love thee?

Recommended Reference Books:

1. A History of English Literature by W.J.Long.
2. A Critical History of English Literature by David Daiches (Published by supernova)
3. The Cambridge History of English Literature by Ward and Waller. (Published by Kessinger)
4. A Glossary of Literary Terms by M.H.Abrams (Published by Cengage)
5. The Penguin Dictionary of Literary Terms and Theory by J.A. Cuddon.(Published by Penguin)

History



K.V.R. Govt. College for Women (A), Kurnool
Syllabus for History for UG Course III B.A. 2017-18
SEMISTOR – V

Paper – V

History of Modern World (1453-1821 A.D)

UNIT – I	Characteristic features of Renaissance – significance of Reformation and Counter Reformation movements in Europe – Geographical Discoveries and Rise of Colonialism - Mercantalism and commercial Revolution – Emergence of Modern World Economy.
UNIT – II	Emergence of Nation States in Europe – Nature of Feudalism in Europe and Aisa.
UNIT – III	Age of Revolutions – Glorious Revolution (1688) American Revolution (1776) – French Revolution.

Reference Books :

1	E.H. Carr, World between two world wars
2	James & Mecdan, japan : a modern history.
3	Norman lowe, mastering world history
4	Steven vaugh, essential modern world history
5	Christopher howe, china and Japan.
6	C.D. Hazen, Europe since 1789



K.V.R. Govt. College for Women (A), Kurnool

Syllabus for History for UG Course III B.A. 2017-18

SEMISTOR – V

Paper - V

History & Culture of Andhra Desa (from 12th to 19th Century A.D)

UNIT – I	Influence of Geographical features on History, Sources – A brief survey of political history from satavahanas to Vijayanagara Period – Socio – Economic – Cultural conditions under Satavahana, Kakatiya and Vijayanagara rules – Growth and spread of Jainism and Buddhism and their contribution to Art and Architecture.
UNIT – II	The Qutub Shahis – A brief survey of their political history – Society, Economy and Culture. The Asaf Jahis – A brief survey of their political history – Society, Economy and Culture – Salarjung's reforms.
UNIT – III	Andhra under Colonial Rule. Coming of European Merchant Companies – Conquest of Andhra by the British – Early uprisings – Administration – Land Revenue Settlements – Agrarian Conditions – Famines – Impact of Industrial Revolution on Andhra Economy – Sir Thomas Monroe – Impact of 1857 Revolt on Andhra.

Reference Books

1	Suravaram Paratap Reddy, Andhrula Sanghika Charitra
2	Dr. B. Raja Rao, seta Nagara Sevasrama Charitra.
3	K. Satya Murthy, Survey of Andhra Pradesh History
4	Robert Sewell, A Forgotten Employee.
5	Kampati Satyanarayana, Andhrula charitra Samskruthi



K.V.R. Govt. College for Women (A), Kurnool

Common Framework of CBCS for Colleges in Andhra Pradesh
w.e.f. 2017-2018 (Revised in April, 2016)

Semester – VI

Paper – VII-(A) :: (Elective Paper)

HISTORY OF MODERN EUROPE (from 19th Century to 1945 A. D.)

(History of Modern World (1821 – 1945))

Unit – I	Industrial Revolution: Origin, Nature and Impact.
Unit – II	Unification Movements in Italy & Germany and their Impact.
Unit - III	Communist Revolution in Russia – Causes, Course and Results – Impact on World Order.
Unit - IV	World War I: Age of Rivalry in Europe Between 1870 and 1914 – Results of the War – Paris Peace Conference - League of Nations.
Unit – V	World War II: Causes, Fascism & Nazism – Results: The United Nations Organization: Structure, Functions and Challenges.

References:

1	J.A.Hobson, Imperialism: A Study
2	C.D. Hazen, Modern Europe up to 1945
3	H.A.L.Fisher, History of Europe
4	C.M.M.Ketelbey, A History of Modern Times
5	Grant and Temperley (ed), Europe in the 18 th and 20 th Centuries
6	David Thomson, Europe Since Napoleon
7	A.P.J.Taylor, The Struggle for Mastery in Europe
8	S.P.Nanda, History of Modern World
9	S.N.Dhar, International Relations and World Politics Since 1919

Project Work: Project work on the consequences of industrialization & globalization on society and economy should be given to students.



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Common Framework of CBCS for Colleges in Andhra Pradesh
w.e.f. 2018 – 2019 (Revised in April, 2016)

Semester – VI

Paper – VIII-A-1 (Cluster Elective Paper -1) CULTURAL TOURISM IN ANDHRA PRADESH

Unit – I	Concepts of Tourism : Nature – Scope – Definition – Tourists & Excursionists – Domestic & International Tourists.
Unit – II	Types of Tourism : Heritage Tourism – Pilgrimage Tourism – Recreation Tourism – Sports & Adventure Tourism – Advance Tourism – Health Tourism – Environment Tourism.
Unit – III	History and Tourism – Heritage Sites – Definition – Ancient Monuments Preservation Act of 1904, Act of 1958 and Act of 1972 – Archaeological Survey of India – Stage Museums.
Unit – IV	Planning and Development of A.P. Tourism : APTDC – Aims & Objectives – Fairs & Festivals – Andhra Cuisine – Restaurants – Eco Tourism – Beaches & Hills Resorts – Mountaineering – Tourist Places in A.P.
Unit – V	Modalities of Conducting Tourism : Field work – Visit to a site – Conduct of Research – Preparation of Project Report.

Reference :

1	APTDC Publications
2	Ashorth G.J. Marketing in Tourism Industry
3	Bhatia A.K. Tourism Development
4	Clare, Gunn, Tourism Planning
5	Khan, Nafees A, Development Tourism in India
6	Krishna K Karama, Basics of Tourism
7	Marrison A.M. Hospitality and Travel Marketing
8	Ranga Mukesh, Tourism Potential in India
9	Sarkar H, Museums and Protection of Monuments and Antiquities in india
10	Vijayalaxmi K.S., History of Tourism.

Field Trip : Compulsory field trip to destinations of architectural archaeological, historical and cultural importance is to be conducted. Students should be made to prepare detailed report on the hand – on experience they gained in such trips.

Students should be encouraged to create blogs for local site seeing places and to write and organize articles on those sports.



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Common Framework of CBCS for Colleges in Andhra Pradesh
w.e.f. 2018 – 2019 (Revised in April, 2016)

Semester – VI

Paper – VIII-A-2 (Cluster Elective Paper -2)

POPULAR MOVEMENTS IN ANDHRA DESA (1848 to 1956 A.D.)

(History and Culture of Andhra from 1857 to 2014)

Unit – I	Social & Self Respect Movements : Social Conditions – Kandukuri Veeresalingam, Raghupathi Venkata Rathnam Naidu, Guruzada Apparao, Komaraju Venkata Laxmana Rao, New Literary Movements : Causes – Rayaprolu Subbrao, Viswanatha Sathyanarayana, Gurram Jashua, Boyi Bheemanna, Sri Sri – Impact.
Unit – II	Freedom Movement in Andhra (1885 – 1920) : Contributory Factors – Vandemataram Movement – Swadeshi & Boycott programs – Glorious Event at Rajahmundry, Kakinada, Kotappakonda & Tenali – Home Rule Movement in Andhra.
Unit – III	Freedom Movement in Andhra (1920 – 1947) : Non – Cooperation Movement – Chirala Perala, Palanadu & Pandanadipadu Activities – Alluri Seetarama Raju & Rampa Revolt (1922 – 1924) – Anti Simon Commission Movement – Civil Disobedience Movement – Quit India Movement.
Unit – IV	Movement for Separate Andhra State (1953) : Causes – Andhra Maha Sabha – Andhra Provincial Congress Committee – Andhra University – Conflict between Coastal Andhra & Rayalaseema – Sri Bagh Pact – Constitution of Committees & their Contribution Martyrdom of Potti Sriramulu – Formation of separate Andhra State.
Unit – V	Movement for formation of Andhra Pradesh (1956) : Visalandhra Mahasabha – Role of Communists – States Reorganization Committee – Gentlemen's Agreement – Formation of Andhra Pradesh.

Reference :

1	B. Kesava Narayana, Political and Social Factors in Modern Andhra
2	K.V. Narayana Rao, The Emergence of Andhra Pradesh
3	M. Venkata Ranagaiah, The Freedom Struggle in Andhra Pradesh
4	P.R. Rao, History of Modern Andhra
5	Sarojini Regani, Highlights of Freedom Movement
6	Sarojini Regani
7	V. Ramakrishna, Social Reform Movement in Andhra.
8	B. Kesava Narayana, Modern Andhra & Hyderabad – 1858 – 1956 A.D., 2016

Project work : With the aim of understanding of techniques and methods of research and presentation, students should be encouraged to draft a report on local writers, struggles, human rights movements, different types of social discrimination etc.



K.V.R. Govt. College for Women (A), Kurnool.

Common Framework of CBCS for Colleges in Andhra Pradesh
w.e.f. 2018 – 2019 (Revised in April, 2016)

Semester – VI

Paper – VIII-A-3 (Cluster Elective Paper -3)

CONTEMPORARY HISTORY OF ANDHRA PRADESH (1956 – 2014)

Unit – I	Social – Economic Changes in Andhra Pradesh – River Project & Infrastructural Development – Education & Scientific Progress Regional Politics – Emergence of Telugu Desam Party.
Unit – II	Growth of Leftist Ideology – Marxist & Radical Literature – Naxalbari Movement – Communist Activities – Electoral Politics – Present Status of Communist Movement.
Unit – III	Dalit Movement – Understanding Untouchability – Education – Literature – Struggle for Identity – Demand for Political Space.
Unit – IV	Early trends towards Bifurcation : Jai Telangana Movement (1969) – Mulki Rules – Legal Battle – Jai Andhra Movement (1972) – Six Point Formula (1973).
Unit – V	Bifurcation of Andhra Pradesh : Power Politics – Economic Discontentment – Riparian Disputes – Unemployment – Foundation of Telangana Rastrasamiti – Movement for Separate Telangana & unified Andhra Pradesh – Formation of Telangana State(2014)

Reference :

1	Barry Pavier, The Telangana Movement – 1944-51
2	Chinnayya Suri Agrarian Movement in Andhra, 1921-71
3	K. Ramachandra Murthy, Unveiling Telangana State
4	P.R. Rao, History of Modern Andhra
5	S. Ratnakar, A Brief History of Telangana & Andhra Pradesh
6	Sri Krishna Committee Report
7	Tarimela Nagireddy, India Mortgaged
8	Y.V. Krishna Rao, Growth of Capitalism in Indian Agriculture : A Case Study of A.P.
9	Katti Padma Rao
10	News Paper Clippings (2001-2014)

Project work : Students may be asked to prepare assignments on local caste struggles; regional disparities; aspirations; recent development etc. through interviews and verifying press reports.

Economics

KVR GOVT. COLLEGE FOR WOMEN (A),KURNOOL.

B.A Economics

II Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2017-18

Semester-V

Paper-V (Core Paper)

Economic Development and Indian Economy

Module-1

Concept of Economic Growth – Distinction between economic growth and development – Measurement of economic development – Theories of Economic Growth : Adam Smith ,Rostow,Karl Marx and Harrod & Domar Model.

Module-2

Sustainable development – Balanced and unbalanced growth – choice of techniques Labour intensive and capital intensive methods.

Module-3

Basic features of the Indian Economy – Natural Resources – Important Demographic features – Concept of Population Dividend – Population Policy.

Module- 4

National Income in India – trends and composition – poverty, inequalities and Unemployment – Measures taken by the Government – MGNREGS

Module-5

Economic reforms – liberalization, privatization and globalization – concept of inclusive growth.

REFERENCES:

1. Dhingra, I.C-“Indian Economy ‘,Sultan Chand ,2014.
2. Ruddar Dutt and K.P.M. Sundaram- “Indian Economy “, S.Chand & Co.,2015.
3. G.M.Meier –“Leading Issues in Economic Development “,Oxford University Press, New York.
4. M.P.Todaro –“Economic Development”,Longman , London 6/e,1996
5. Reserve Bank of India- Hand book of Statistics on Indian Economy(Latest).
6. S.K.Misra &V.K.Puri-“Indian Economy”,Himalaya Publishing House,2015.
7. R.S.Rao, V.Hanumantha Rao & N.Venu Gopal (Ed)-Fifty Years of Andhar Pradesh (1956-2006),Centre for Documentation, Research and Communications , Hyderabad,2007
8. G.Omkarnath – Economics – A Primer for India – Orient Blackswan,2012.
9. Benjamin Higgins – Economics Development
10. Telugu Academy Publications.
11. Dr. Ch.S.G.K.Murthy, Indian Economy –Gitam University.

KVR GOVT. COLLEGE FOR WOMEN (A),KURNOOL.

B.A Economics

II Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2017-18

Semester-VI

Paper-VI (Core Paper)

Indian and Andhra Pradesh Economy

Module-1

Indian Agriculture – Importance of Agriculture in India- Agrarian structure and relations –Factors determining Productivity – Agricultural Infrastructure – Rural credit – Micro Finance- Self Help Group (SHGs)-Agricultural Price policy – concept of core Insurance – Food Security.

Module-2

Structure and growth of Indian Industry-Industrial Policies of 1956 & 1991.Meaning of Micro small and Medium enterprises(MSMEs)-Problems and Prospects of small scale Industries in India.

Module-3

Disinvestment of India-FEMA-Foreign direct Investment-Service Sector in India-Reforms in Banking and Insurance-IT,Education and Health.

Module-4

Planning in India Economy-Objectives of Five Year Plans-Review of Five Year Plans-Current Five Year Plans-NITI Aayog

Module-5

Andhra Pradesh Economy-Population-GSDP-Sector Contribution and Trends-IT-Small Scale Industry-SEZs.

REFERENCES

1. Dhingra,I.C.-"Indian Economy",Sultan Chand,2014.
2. Ruddar Dutt and K.P.M Sundharam-"Indian Economy",S.Chand & Co,2015.
3. G.M.Meier-"Leading Issues in Economic Development",Oxford University Press,New York ,3/e.
4. M.P.Todaro-"Economic Development ",Longman ,London 6/e,1996.
5. Reserve Bank of India-Hand book of Statistic on Indian Economy (Latest).
6. S.K.Misra & V.K.Puri-"Indian Economy",Himalaya Publishing House,2015.
7. R.S.Rao,V.Hanumantha Rao& N.Venu Gopal(Ed)-Fifty years of Andhra Pradesh(1956-2006),Centre for Documentation,Research and Communications,Hyderabad,2007.
8. G.Omkarnath-Economics-A Primer for India-Orient Blackswan,2012.
9. Telugu Academic Publications.
10. Dr.Ch.S.G.K.Murthy,Indian Economy-Gitam University.

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B.A Economics

II Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2017-18

Semester-VI

Paper-VII: PUBLIC ECONOMICS-1

Module-1: INTRODUCTION

Public Finance vs. Private finance; public goods, merit goods and private goods; Government as an agent of Economic Development; Objectives of budgetary and policy- Allocation, Distribution, Stabilization and Economic Growth; Functional Finance; Principles of Maximum social advantage.

Module-2: THEORIES OF TAXATION

Definition of Tax-Canons of taxation, Good tax system; Benefit approach to taxation- Lindhal, Bowen and Samuelson Models; Ability to pay approach to taxation; Excess burden of taxes, Choice of tax base, Structure of tax rates; Incidents and impact of taxation, Shifting of tax burden.

Module-3: SOURCES OF REVENUE

Tax and Non-tax revenues; Direct and indirect taxes; Proportional, Progressive and Regressive taxation; Analysis of income tax, Corporation tax, wealth tax, Estate duty, Customs duties, Excess duties, Service tax in India; Effects of Taxation on Distribution and Economic growth; Tax reforms in India.

Module-4: PUBLIC EXPENDITURE

Determinates of public Expenditure; Laws of growth of public expenditure-Wagner's law, Wiseman-Peacock Hypothesis; Growth of public Expenditure in India; Effects of government Expenditure on production, Distribution and Economic growth; Measures to control the growth of public expenditure.

REFERECE BOOKS

1. Charles M.Allan	The theory of taxation ,Penguin
2. Hugh Dalton	Principle of public finance
3. R.A.Musgrave	Public finance in theory and practice
4. Hareler B.P.Richard D Irwin,	Modern public finance,
5. Philip Taylor	Economics of Public finance
6. Otto Eckstein	Public finance,Fourth EditionPrentice-Hall of India Pvt.Ltd,New Delhi.
7. B.P Tyagi	Public Finance
8. M.C.Vaish & H.S.Agarwal	Public Finance
9. Bhatia,H.L	Public finance with effect from 2006-2007.

Cluster Elective Paper-VIII-F 1 –Descriptive Economic Statistics

- Module-I** Nature and Scope of Statistics- Definitions, Role of Statistics in Modern Era- Importance and Limitations of Statistics.
- Module – II** Collection of Data – Primary Data-Methods of Collecting Primary data - Secondary Data –Sources of Secondary Data –.Census and sampling methods – merits and demerits.
- Module – III** Classification –Types of Classification- Tabulation – Types of Tabulation – Preparation of Frequency Distribution Table.
- Module – IV** Diagrammatic representation of data-Importance of Diagrams- types of Diagrams - Simple Bar Diagram –Pie Diagram –
- Module – V** Graphical representation of data- Histogram – Frequency Polygon – Frequency Curves and Ogives.

Reference Books:

1. Statistical Methods by S.P.Gupta
2. Fundamentals of Statistics by D.N.Elanhance
3. Quantitative Techniques by R.K.Sharma Kalyani Publishers
4. Quantitative Techniques by Jothirmayee Himalaya Publishers
5. Quantitative Techniques by Subrayudu Jai Bharat Publishers, Guntur
6. Statistics by S.C.Gupta
7. Business Statistics by S.P.Gupta & M.P.Gupta
8. Statistics an Introductory Analysis by Taro Yamane
9. Fundamentals of Mathematical Statistics by S.C.Gupta & V.K.Kapoor
10. Telugu Academy Books

KVR GOVT.COLLEGE FOR WOMEN(A),KURNOOL.

III B.A. CBCS w.e.f.2017-18

Semester –VI

Cluster Elective Paper-VIII-F 2 –Statistical Methods

- Module I** Measures of central Tendency- Introduction - Arithmetic Mean- Arithmetic Mean. Merits and Demerits.
- Module II** Median- Quartiles- Deciles and Percentiles-Mode - Merits and Demerits.
- Module III** Geometric Mean, - Harmonic Mean -Merits and Demerits.
- Module IV** Measures of Dispersion- Range- Quartile Deviation Merits and Demerits.
- Module V** Mean Deviation- Standard Deviation -Co efficient of Variation- Merits and Demerits

Reference Books:

1. Statistical Methods by S.P.Gupta
2. Fundamentals of Statistics by D.N.Elanhance
3. Quantitative Techniques by R.K.Sharma Kalyani Publishers
4. Quantitative Techniques by Jothirmayee Himalaya Publishers
5. Quantitative Techniques by Subrayudu Jai Bharat Publishers, Guntur
6. Statistics by S.C.Gupta
7. Business Statistics by S.P.Gupta & M.P.Gupta
8. Statistics an Introductory Analysis by Taro Yamane
9. Fundamentals of Mathematical Statistics by S.C.Gupta & V.K.Kapoor
10. Telugu Academy Books

Cluster Elective Paper-VIII-F 3 –Statistical Techniques

- Module I** Skewness- Karl Pearson's and Bowley's Measures of Skewness- Kurtosis – concept and meaning.
- Module II** Correlation - Simple Correlation Karl Pearson's Correlation- Spearman's Rank Correlation.
- Module III** Regression Analysis- Estimation of Regression lines of Y ON X & X on Y.
- Module IV** Analysis of Time series- Determination of Trend, Semi average- Moving average methods and Straight line Method.
- Module V** Index Numbers- Methods of Construction of Laspeyer's, Passchies and Fisher's Ideal Index Number -Time Reversal Test and Factor reversal Test.

Reference Books:

1. Statistical Methods by S.P.Gupta
2. Fundamentals of Statistics by D.N.Elanhance
3. Quantitative Techniques by R.K.Sharma Kalyani Publishers
4. Quantitative Techniques by Jothirmayee Himalaya Publishers
5. Quantitative Techniques by Subrayudu Jai Bharat Publishers, Guntur
6. Statistics by S.C.Gupta
7. Business Statistics by S.P.Gupta & M.P.Gupta
8. Statistics an Introductory Analysis by Taro Yamane
9. Fundamentals of Mathematical Statistics by S.C.Gupta & V.K.Kapoor
10. Telugu Academy Books

Political Science

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
CBCS: SYLLABUS –as Per APSCE SEMESTER WISE (2017-18)
III YEAR B.A. Political Science
PAPER-V(CORE): INDIAN POLITICAL THOUGHT
(భారతీయ రాజనీతి తత్వ విచారము)

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Unit-1: Traditions of Ancient Indian Political Thought

(ప్రాచీన భారతీయ రాజనీతి తత్వ విచారము--సాంప్రదాయాలు)1-4

1. Sources and features of Ancient Indian Political Thought
ప్రాచీన భారతీయ రాజనీతి తత్వ విచారము--ఆధారాలు మరియు లక్షణాలు)
2. Manu: Social laws (మనువు : సామాజిక శాసనాలు)
3. Kautilya:Theory of the State (కౌటిల్యుడు - రాజ్య సిద్ధాంతము)

Unit-2: Renaissance Thought (తత్వ విచార పునరుజ్జీవనము)

1. Rammohan Roy: Religious and Social Reform (రామ్మోహన రాయ్ : మత సంస్కరణలు, సాంఘిక సంస్కరణలు)
2. Pandita Ramabai: Gender (పండిత రమా భాయి--స్త్రీ పురుష సమానత్వం- స్త్రీ వాదము)

Unit-3: Early Nationalism ప్రారంభ (తొలితరం)జాతీయవాదము)

1. DadabaiNaoroji: Drain Theory and Poverty (దాదా భాయి నౌరోజీ - డ్రేన్ సిద్ధాంతం మరియు పేదరికం)
2. Ranade M G : The Role of the State and Religious Reforms గోవింద రణడే-- మత సంస్కరణలు--రాజ్యం పాత్ర

Unit-4: Religious Nationalism (మత జాతీయవాదం)

1. Savarkar V D : Hindutva or Hindu Cultural Nationalism(వినాయక్ దామోదర్ సావర్కర్ - హిందూత్వము - హిందూ సాంస్కృతిక జాతీయవాదము)
2. Mohammed Iqbal: Islamic Communitarian Nationalism (మహమ్మద్ ఇక్బాల్ - ఇస్లామిక్ మత జాతీయవాదము)

Unit-5: Democratic Egalitarianism (ప్రజాస్వామ్య సమానత్వము)

1. Gandhi-Swaraj and Satyagraha (మహాత్మా గాంధీ స్వరాజ్యము మరియు సత్యాగ్రహము)
2. Jawaharlal Nehru- Democratic Socialism (జవహర్ లాల్ నెహ్రూ ప్రజాస్వామ్య సామ్య వాదము)
3. Dr.Ambedkar B R – Annihilation of Caste System (డా. బి ఆర్ అంబేద్కర్--కుల నిర్మూలన)

Reference books:

1. Pantham Thomas and Kenneth Deutsch(Ed)(1986)
Political thought in modern India, Sage, New Delhi
 2. BidyutChakrabarty and Rajendra Kumar Pandey (2009) modern Indian political thought, Sage, New Delhi
 3. Gupreet Mahajan (2013), India : Political ideas and making of a democratic discourse, zed book, London
 4. Partha Chatterjee (1986) nationalist thought and the colonial world: A derivative disclosure, zed books, London
 5. Bhikhu Parekh (1999) colonialism, tradition and reform, Sage, New Delhi
- Bhikhu Parekh(1989) Gandhi's political philosophy ,Macmillan, London

K.V.R. GOVERNMENT COLLEGE FOR WOMEN(AUTONOMOUS), KURNOOL
III YEAR B.A. Political Science
CBCS: SYLLABUS - SEMESTER WISE (2017-18)
As per Andhra Pradesh State Council of Higher Education
PAPER-VI (CORE): WESTERN POLITICAL THOUGHT
(పాశ్చాత్య రాజనీతి తత్వ విచారము)

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Unit-1: Classical Western Political Thought (ప్రాచీన పాశ్చాత్య రాజనీతి తత్వ విచారము)

1. Plato: Theory of Forms, Critique of Democracy, Justice (ప్లేటో -జ్ఞాన సిద్ధాంతం, ప్రజాస్వామ్యము పై విమర్శ, ధర్మము)
2. Aristotle: Citizenship, State, Justice, Virtue (అరిస్టాటిల్: పౌరసత్వం, రాజ్యము, సుగుణము)

Unit-2: Early Medieval to the Beginning of Modern Thought (ప్రాచీన మధ్యయుగ నుండి ఆధునిక యుగ రాజనీతి తత్వ విచారము)

1. St. Augustine: Earthly City and Heavenly City, Evil, Freewill, Moral Action (1. సెయింట్ అగస్టీన్: భూతల నగరం మరియు దేవుడి నగరం ,దుష్టత, స్వేచ్ఛ, నీతి ధర్మ,
2. Machiavelli, Statecraft, Virtue, Fortuna (మాఖియెల్లి-రాజ్య తంత్రం,సుగుణము సత్వవర్తన,

Unit-3: Liberal Thought (ఉదారవాద తత్వ విచారము)

1. Thomas Hobbes: Human Nature, Social Contract, Liberty, State (థామస్ హబ్స్ -మానవ స్వభావం, సామాజిక ఒడంబడిక , మరియు రాజ్యము
2. John Locke: Natural Rights, Consent, Social Contract, State (జాన్ లాక్ సహజ హక్కుల సిద్ధాంతము, సమ్మతి సామాజిక ఒడంబడిక, రాజ్యము
3. Rousseau: Social institutions and Moral Man, Equality, liberty and General Will (రూసో 'సమాజ సంస్థలు మరియు నైతిక మానవుడు,సమానత్వం, స్వేచ్ఛ, జనేచ్ఛసిద్ధాంతము'

Unit-4: Liberal Democratic Thought (ఉదారవాద ప్రజాస్వామ్య భావన)

1. Jeremy Bentham: Utilitarianism థెంథం- ఉపయోగితావాదం
2. John Stuart Mill: Individual liberty, Representative Government (జే. యస్. మిల్: వ్యక్తి స్వేచ్ఛ, ప్రాతినిధ్య ప్రభుత్వం

Unit-5: Philosophical Idealism and its critique తాత్విక భావనాదం మరియు దానిపై విమర్శ

1. Hegel: Individual Freedom, Civil Society, State (హెగెల్: వ్యక్తి స్వేచ్ఛ , పౌర సమాజం,, రాజ్యము)
2. Karl Marx: Alienation, Surplus Value, Materialist Conception of History, State (కార్ల్ మార్క్స్:

పరాయాకరణ, మిగులు విలువ, చారిత్రక గతి తార్కిక బౌతిక వాదము, రాజ్యము)

Reference books

1. Shefali Jha (2010) Western Political Thought from Plato to Karl Marx, Pearson, NewDelhi
2. Boucher D and Kelly P (Eds) (2009) Political Thinkers from Socrates to the Present, Oxford University press, oxford
3. Coleman J (2000) A History of Modern Political Thought: From Ancient Greece to early Christianity, Blackwell publishers, oxford
4. Macpherson C B (1962) The Political Theory of Possessiveness Individualism, Oxford University press, oxford
5. Hampsher-monk I (2001) A History of Modern Political Thought: Major Political Thinkers fromHobbes to Marx,Blackwell publishers, oxford

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
CBCS: SYLLABUS - SEMESTER WISE (2017-18)
III YEAR B.A. Political Science SEMESTER – VI
PAPER-VII-(C) (ELECTIVE): LOCAL SELF - GOVERNMENT IN ANDHRA PRADESH
(ఆంధ్ర ప్రదేశ్ లో స్థానిక ప్రభుత్వాలు)

Unit- I: Evolution of Local Self-Government in India (భారత దేశం లో స్థానిక ప్రభుత్వాల పరిణామం)

1. Constitutional Provisions on local Self-Governments (స్థానిక ప్రభుత్వాలకు సంబంధించిన రాజ్యాంగ నిబంధనలు)
2. Recommendations of Balwantrai Mehta and Ashok Mehta Committees on Local Self -Government (స్థానిక ప్రభుత్వాలకు సంబంధించిన బల్వంత్ రాయ్ కమిటీ మరియు అశోక్ మెహతా కమిటీ సిఫారసులు)

Unit-II: Importance of Constitutional Amendments (రాజ్యాంగ సవరణల ప్రాముఖ్యత)

1. 73rd Amendment – Rural Local bodies; Basic features (73 వ రాజ్యాంగ సవరణ- గ్రామీణ స్థానిక ప్రభుత్వాల మౌలిక లక్షణాలు)
2. 74th Amendment – Urban Local bodies; Basic features (74 వ రాజ్యాంగ సవరణ- పట్టణ ప్రాంత స్థానిక ప్రభుత్వాల మౌలిక లక్షణాలు)

Unit-III: Structure and functions of Panchayati Raj in Andhra Pradesh (ఆంధ్ర ప్రదేశ్ లోని పంచాయతీ రాజ్ సంస్థల నిర్మాణము మరియు విధులు)

1. Gram Panchayat (గ్రామ పంచాయతీలు)
2. Mandal Parishad (మండల పరిషత్తు లు)
3. ZillaParishad (జిల్లా పరిషత్తు లు)

Unit-IV: Structure and functions of Urban local bodies in Andhra Pradesh (ఆంధ్ర ప్రదేశ్ లోని పట్టణ ప్రాంత నిర్మాణము మరియు విధులు)

1. Nagar Panchayats (నగర పంచాయతీలు)
2. Municipalities (మున్సిపాలిటీలు)
3. Municipal Corporations (మున్సిపల్ కార్పొరేషన్లు)

Unit-V: Role of Leadership and Emerging Challenges (నాయకత్వం పాత్ర మరియు నూతనముగా ఎదురవుతున్న సవాళ్లు)

1. Emerging patterns of leadership (నూతనంగా అభిర్భవిస్తున్న నాయకత్వం నమూనాలు)
2. Problems of autonomy: Financial and Administrative spheres (ఆర్థిక మరియు పరిపాలనా రంగాల లో స్వయం ప్రతిపత్తి ఇవ్వడం వల్ల తలెత్తిన సమస్యలు)

Reference Books:

1. Maheswari, S.R., Local Self Government in India, Orient longman, 1971
 2. Venkatesan V, Institutionalising Panchayati Raj in India, Institute of Social Sciences, New Delhi 2002
 3. Baviskar B.S, Inclusion and Exclusion in Local Governance, Sage Publication, New Delhi 2009.
 4. M.P. Dube and Padalia, M (Ed), Democratic Decentralization and Panchayati raj in India, Anamika Publishers, New Delhi, 2002.
- BalaRamulu, CH and Ravinder D, "Five Decades of Democratic Decentralization process in Andhra Pradesh" in Social Change (Journal of the Council for Social Development published by Sage International) Vol.4

Unit- I: Basic Concepts of International Relations (అంతర్జాతీయ సంబంధాలు-మౌలిక భావనలు)

1. Meaning, Nature and Scope of International Relations

అంతర్జాతీయ సంబంధాలు - అర్థము, స్వభావము మరియు పరిధి

2. Approaches to the study of International Relations , Idealism --Classical Realism

అంతర్జాతీయ సంబంధములు - అధ్యయనా దృక్పథములు, ఆదర్శవాదము, సాంప్రదాయ వాస్తవికవాదము

Unit-II: Phases of International Relations (1914-1945)

(అంతర్జాతీయ సంబంధముల దశలు (1914-1945)

1. Causes for the First World War (మొదటి ప్రపంచ యుద్ధము - కారణాలు)

2. Causes for the Second World War (రెండవ ప్రపంచ యుద్ధము - కారణాలు)

Unit-III: Phases of International Relations (1945 onwards)

(అంతర్జాతీయ సంబంధముల దశలు (1945 తరువాత)

1. Origin of First Cold War (మొదటి ప్రచ్ఛన్న యుద్ధము మూలములు)

2. Origin and the End of Second Cold War (రెండవ ప్రచ్ఛన్న యుద్ధము మూలములు మరియు ముగింపు)

Unit-IV: International Organisation (అంతర్జాతీయ సంస్థలు)

1. The role of UNO in the protection of International Peace

(ప్రపంచ శాంతి పరిరక్షణ లో ఐక్య రాజ్య సమితి పాత్ర)

2. Problems of the Third World : Struggle for New International Economic Order

(మూడవ ప్రపంచ దేశముల సమస్యలు--నూతన ప్రపంచ ఆర్థిక వ్యవస్థ కోసం పోరాటం)

Reference Books:

1. Jackson, R and Sorensan Y, Introduction to International Relations; Theories and approaches, New York, OUP, 2008.
2. Baylis, J and Smith, S (Eds), The Globalization of World Politics; An Introduction to International Relations, Oxford, OUP, 2011
3. Aneek Chatterjee, International Relations Today; Concepts and Applications, New Delhi, Pearson Education, 2008.
4. E.H. Carr, International relations between the two world Wars, Lodon, Palgrave Macmillan, 2004.

K.V.R. Government College For Women (Autonomous), Kurnool
CBCS: Syllabus - Semester Wise (2017-18) As Per APSCE
III YEAR B.A. Political Science VI- Semester
PAPER: VIII-C-2 (Cluster Elective): INDIAN FOREIGN POLICY
(భారత విదేశాంగ విధానం)

Unit- I: Evolution of Indian Foreign of Policy

(భారత విదేశాంగ విధాన పరిణామము)

1. Determinants of Indian Foreign of Policy(భారత విదేశాంగ విధాన నిర్ణయకాలు)
2. Continuity and change in Indian Foreign Policy(భారత విదేశాంగ విధానం కొనసాగింపు మరియు మార్పు)

Unit-II: Non-Alignment and UNO (అలీన ఉద్యమం మరియు ఐక్య రాజ్య సమితి)

1. Non-Alignment Movement—Role of India and relevance (అలీన ఉద్యమం --భారత దేశం పాత్ర మరియు అనుగుణ్యత)
2. Role of India in the UNO in protection of International Peace
(ప్రపంచ శాంతి పరిరక్షణ లో ఐక్య రాజ్య సమితి లో భారత దేశ పాత్ర)

Unit-III: India's Relation with USA and China అమెరికా,చైనా దేశాలలో భారత దేశ సంబంధాలు)

1. Indo- US Relations: Pre- Cold War Era, Post- Cold War Era (భారత- అమెరిక సంబంధాలు- పూర్వ ప్రచ్ఛన్న యుద్ధ దశ – ప్రచ్ఛన్న యుద్ధ తదనంతర దశ
2. India – China Relations: Pre- Cold War Era, Post- Cold War Era (భారత- చైనా సంబంధాలు పూర్వ ప్రచ్ఛన్న యుద్ధ దశ – ప్రచ్ఛన్న యుద్ధ తదనంతర దశ

Unit-IV: India and her Neighbours (భారత దేశం మరియు దాని పొరుగు దేశాలు)

1. India's relations with SAARC countries (సార్క్ దేశాలలో భారత దేశ సంబంధాలు)
2. India's role in South Asian Association of Regions Cooperation (SAARC)
(దక్షిణ ఆసియా ప్రాంతీయ సహకార సంస్థ లో భారత దేశం పాత్ర)

Reference Books:

1. David Scott (Ed), Handbook of India's International Relations, London, Routledge,2011
2. Ganguly, S (Ed), India as an Emerging Power,Portland, Franck class, 2003
3. Pant, H, Contemporary Debates in Indian Foreign and Security Policy, London, Palgrave Macmillian,2008
4. Tellis, A and Mirski, S (Eds), Crux of Asia; China, India, and the Emerging global Order, Washington, Carnegie endowment for international peace,2013
5. Muni, S.D, India's Foreign Policy Delhi CUP, 2009
6. Alyssa Ayres and Raja Mohan, C (Eds), Power Realignment in Asia: China, India and the United States, New Delhi, Sage, 2002.
7. Appadorai, A, Domestic roots of Indian Foreign Policy, New Delhi, OUP,1971 Dutt, V.P, India's Foreign Policy in a Changing World, New Delhi,NBT,2011

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CBCS: SYLLABUS - SEMESTER WISE (2017-18) As per APSCE
III YEAR B.A. Political Science SEMESTER – VI
PAPER: VIII-C-3 (Cluster Elective): CONTEMPORARY GLOBAL ISSUES (సమకాలీన ప్రపంచ సమస్యలు)

Unit- I: Concept of Globalization (ప్రపంచీకరణ భావన)

1. Economic Concept of Globalization (ప్రపంచీకరణ - ఆర్థికభావన)
2. Political Concept of Globalization (ప్రపంచీకరణ - రాజకీయ భావన)

Unit-II: Anchors of Global Political Economy (ప్రపంచ రాజకీయ ఆర్థిక వ్యవస్థ ను స్థిరీకరణ చేయు

వ్యవస్థలు)

1. International Monetary Fund , World Bank-Nature, Role and Functions (ఐ. యం. యఫ్. మరియు ప్రపంచ బ్యాంకు-- వాటి స్వభావం, పాత్ర, విధులు
2. World Trade Organization: Origin, Nature and role in the context of Globalization (ప్రపంచ వాణిజ్య సంస్థ - ఆవిర్భావం, స్వభావం, ప్రపంచీకరణ నేపథ్యం లో దాని పాత్ర)

Unit-III: Nation State and Globalization (జాతి రాజ్యాలు మరియు ప్రపంచీకరణ

1. The role of Nation State in the context of Globalization(ప్రపంచీకరణ నేపథ్యం లో జాతి రాజ్యాల పాత్ర
2. Consequences of Globalization – Rise of Inequalities within and across Nations (ప్రపంచీకరణ పరిణామాలు--దేశాల లో మరియు దేశాల మధ్య అసమానత ల పెరుగుదల)

Unit-IV: Contemporary Global issues (సమకాలీన ప్రపంచం లోని అంశాలు)

1. Ecological Issues: International Agreements On Climate Change (పర్యావరణ అంశాలు--వాతావరణ మార్పు పై కుదిరిన ముఖ్యమైన అంతర్జాతీయ ఒప్పందాలు
2. International Terrorism: Non- State Actors and State Terrorism (అంతర్జాతీయ ఉగ్రవాదం ప్రభుత్వ , ప్రభుత్వేతర సంస్థల ప్రేరేపిత అంతర్జాతీయ ఉగ్రవాదం

Reference Books:

1. Ritzer, G., Globalization: A Basic Text, Sussex: Wiley- Black well, 2009
2. Streger, M., Globalization: A Very Short Introduction, Oxford, OUP, 2013
3. Heywood, A., Global Politics, New York, Palgrave Macmillian, 2011
4. Held, D et.al, Global Transformations; Politics, Economics and culture California, Stanford University Press, 1999 J. Volger, 'Environmental Issues' in J. Baylis, S. Smith and Owens, P (Eds) Globalization of world politics, New York, P

Advance Urdu

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As per Andhra Pradesh State Council of Higher Education

Third year Optional Urdu Paper - V

SEMESTER – V

TAREEKH-E-ADAB

Prescribed book : Tariqe Adabe Urdu by Noorul Hasn Naqvi

UNIT – I Urdu Zabanka Aghaz o Irteqa

UNIT – II Deccani Daur
1. Mohd. Quli Qutub Shah
2. Mulla Wajhi
3. Nusrati

UNIT – III Dabistan-e-Dehli
1. Meer
2. Sauda
3. Dard
4. Ghalib
5. Momin

UNIT – IV Dabistan-e-Lukhnow
1. Insha
2. Jur'at
3. Mushafi
4. Nasiq
5. Aatish

UNIT – V Nazeer Akbarabadi

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Syllabus for B.A. Urdu CBCS 2017-18
As per Andhra Pradesh State Council of Higher Education
Third year Optional Urdu Paper -VI
SEMESTER – V
TAREEKH-E-ADAB
Prescribed book :TariqeAdabe Urdu by NoorulHasnNaqvi

UNIT – I	FORT WILLIAM COLLEGE auriskeMusannafeen 1. Meer Aman 2. HaidarBakhsHaidari 3. Sher Ali Afsos
UNIT – II	SIR SYED AHMED KHAN
UNIT – III	HALI AUR SHIBLI
UNIT – IV	TARAQQI PASAND TEHREEK
UNIT – V	TANZ-O-MIZAH 1. PatrasBukhari 2. ShaukatThanvi 3. Mushtaq Ahmad Yusufi

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Syllabus for I B.A. Urdu CBCS 2017-18

As per Andhra Pradesh State Council of Higher Education

First year Optional Urdu Paper - VII (Elective)

SEMESTER – VI

TANQEED AUR BALAGHAT

Prescribed book: FanneTanqeedaur Urdu TanqeedNigari by NoorulHasanNaqvi

UNIT – I	TANQEED – MafhoomaurAhmiyat
UNIT – II	TANQEED – Agaz – o- Irteqa
UNIT – III	MARKSI TANQEED
UNIT – IV	a) HalikiTanqeedNigari b) Al-e- Ahmed SuroorkiTanqeedNigari
UNIT – V	Tehqeeq-o- TanqeedkaBahamiRishta

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As per Andhra Pradesh State Council of Higher Education

Thirdyear Paper - VIII (Cluster Elective- 1)

SEMESTER – VI

UNIT – I ZARAY-E- IBLAG

UNIT – II SAHAFATH

UNIT – III KHABREIN

UNIT – IV RISALE - MAHNAME

UNIT – V BARQEE SAHAFATH

- a) Radio**
- b) Television**
- c) Internet**

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Syllabus for B.A. Urdu CBCS 2017-18

As per Andhra Pradesh State Council of Higher Education

Third year Paper - VIII (Cluster Elective- 2)

SEMESTER – VI

UNIT – I ISM (NOUN)

UNIT – II SIFATH (ADJECTIVE)

UNIT – III FEYL (VERB)

UNIT – IV JUMLE (SENTENCE)

UNIT – V ILM-E-BAYAN KI SHAKLEIN

- a) Tashbih**
- b) Isteaarah**
- c) Kinaya**

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for B.A. Urdu CBCS 2017-18

As per Andhra Pradesh State Council of Higher Education

Thirdyear

Paper - VIII (Cluster Elective-3)

SEMESTER – VI

UNIT – I TARJUMA NIGARI: TareefaurFunn

UNIT – II TARJUMA NIGARI: Ahmiyat-o- Ifadiyath

UNIT – III TARJUMA KE AQSAM

UNIT – IV MUTRAJUM KE FARAIZ

UNIT – V TARJUME KE NAMUNE

Commerce

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V SEMESTER

DSC 1E 5.1

COST ACCOUNTING

Objective: The objective of this paper is to provide an understanding of Cost and Elements of Cost Accounting and Methods of Costing techniques.

Unit-I: Introduction: Meaning and Definition - Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet. (Theory and Problems)

Unit-II: Elements of Cost: Materials: Material control – Objectives of Material Control – Essential of Material Control - Techniques of Material Control – Minimum and Maximum, Re-order level – EOQ - FIFO, LIFO, (Theory and Problems)

Unit-III: Labour and Overheads: Labour: Control of labor costs – time keeping and time booking – Idle time –Methods of remuneration – Halsy and Rowan Plan - Overheads: Allocation and apportionment of overheads (Theory and Problems)

Unit-IV: Methods of Costing: Job costing – Contract Costing – Features of Contract Costing – Comparison between the Job and Contract Costing – Regarding of Value profit on Contract. (Theory and Problems)

Unit -V: Process costing - treatment of normal and abnormal process losses – preparation of process cost accounts. (Theory and Problems)

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
7. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V SEMESTER

DSC 2E 5.2

Auditing

Objective: The objective of this paper is to provide Knowledge about the concepts of Auditing in the business organizations as well as the preparation of Audit report.

Unit-I: Auditing: Meaning – Objectives – Functions of Auditing – Basic principles governing an Audit – Advantages of Audit.

Unit-II: Types of Audit: Based on Ownership – private and Government - Based on time – Independent - Financial – Internal – Cost – Tax - Secretarial audits.

Unit-III: Planning of Audit: Steps to be taken at the commencement of a new audit - Audit programme - Audit note book - Internal check, internal audit and internal control.

Unit-IV: Vouching and Investigation: Vouching of cash and trading transactions - Investigation, Auditing vs. Investigation

Unit-V: Company Audit and Auditors Report: Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents – Preparation - Relevant Provisions of Companies Act, 2013 relating to preparation of Audit report.

References:

1. S.Vengadamani, —Practical Auditing, Margham Publications, Chennai.
2. Ghatalia, —Principles of Auditing, Allied Publishers Pvt. Ltd., New Delhi.
3. Pradeesh Kumar, Baldev Sachdeva & Jagwant Singh, —Auditing Theory and Practice, Kalyani Publications, Ludhiana.
4. N.D. Kapoor, —Auditing, S. Chand, New Delhi.
5. R.G. Saxena, —Principles and Practice of Auditing, Himalaya Publishing House, New Delhi.
6. Jagadesh Prakesh, —Principles and Practices of Auditing, Kalyani Publications, Ludhiana.
7. Kamal Gupta and Ashok Gupta, —Fundamentals of Auditing, Tata McGraw Hill
8. B.N. Tondan, —Practical Auditing, S.Chand, New Delhi.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V SEMESTER

DSC 3E 5.3

Commercial Geography

Objective: The objective of this paper is to provide an understanding of the Earth-Soils-Environment – Water Resources – Mines – Rivers etc.

Unit -I: The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth – Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.

Unit -II: India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.

Unit -III: India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation) Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.

Unit -IV: India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites - District-wise Profile.

Unit-V: India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

References:

1. Shabiar Ahmad; Quazi ,Natural Resource Consumption and Environment Management, APH Publishing Corporation.
2. Tarachand, Economic and Commercial Geography of India, Vikas Publishing House.
3. Dr. S. Sankaran, Commercial Geography, Margam Publications, Chennai.
4. C. B. Memoria, Commercial Geography, Lal Agarwal & Co.
5. C. B. Memoria, Economic and Commercial Geography, Lal Agarwal & Co.
6. Vinod N. Patel, Commercial Geography, Oxford Book Company

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V SEMESTER

DSC F 5.4

Database Management Systems

Unit-I: Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II: File-Based System, Drawbacks of File-Based System , DBMS Approach, Advantages of DBMS, Data Models , Components of Database System, Database Architecture, DBMS Vendors and their Products.

Unit-III: Entity–Relationship Model: Introduction, The Building Blocks of an Entity–Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD’S Rules, Relational Data Model , Concept of ,Relational Integrity.

Unit-IV: Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit -V: PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor , Procedure, Function ,Packages ,Exceptions Handling, Database Triggers, Types of Triggers.

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. David Kruglinski, Osborne, Data Management System McGraw Hill Publication
3. Shgirley Neal and Kenneth LC Trunik Database Management Systems in Business – PHI.
4. Godeon C. EVEREST, Database Management – McGraw Hill Book Company.
5. MARTIN, Database Management – Prentice Hall of India, New Delhi.
6. Bipin C. Desai, —An Introduction to Database Systemsll, Galgotia Publications.
7. Korth, Database Management systems.
8. Navathe, Database Management systems.
9. S.Sumathi, S.Esakkirajan, Fundamentals of Relational Database Management Systems

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V SEMESTER

DSC F 5.5

e-Commerce

Objective: The objective of this course is to provide an understanding of E-Commerce Practices and to know the different e-marketing strategies adopted by the corporate / on – line business firms

Unit-I: e-Commerce: Features of Electronic Commerce - Distinction between e-Commerce and e-Business - Types of Business Models: B2B, B2C, C2C - Benefits and Limitations of e-Commerce - Apps.

Unit-II: e-Business Applications: Integration and e-Business suits - ERP, e-SCM, e-CRM - Methods and benefits of e-Payment Systems –e-Marketing – Applications and issues

Unit-III: e-Business on different Fields: e-Tourism – e-Recruitment – e-Real Estate – e-Stock Market – e-Music/Movies - e-Publishing and e-Books.

Unit-IV: Concept of Online Education: Process - Methods - e-Content development and Deliveries - Major technologies used in e-Education - Online Testing - Methods - Future Trends.

Unit-V: Mobile Commerce: Ticketing - Mee-Seva; Government and Consumer Services – e-Retailing - e-Groceries – Security challenges - Case Studies.

References:

1. Turban E. Lee J., King D. and Chung H.M: Electronic commerce-a Managerial Perspective, Prentice-Hall International, Inc.
2. Bhatia V., E-commerce, Khanna Book Pub. Co. (P) Ltd., Delhi.
3. Daniel Amor, E Business R (Evolution), Pearson Education.
4. Krishnamurthy, E-Commerce Management, Vikas Publishing House.
5. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill.
6. P. T. Joseph, E-Commerce: A Managerial Perspectives, Tata McGraw Hill.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V I SEMESTER

DSC 1G 6.1

Marketing

Objective: The objective of the paper is to equip the student with various aspects relating to Marketing.

Unit-I: Introduction: Concepts of Marketing: Product Concept – Selling Concept - Societal Marketing Concept – Marketing Mix - 4 P's of Marketing – Marketing Environment.

Unit-II: Consumer Markets and Buyer Behaviour: Buying Decision Process – Stages – Buying Behaviour – Market Segmentation – Selecting Segments – Advantages of Segmentation.

Unit-III: Product Management: Product Life Cycle - New products, Product mix and Product line decisions - Design, Branding, Packaging and Labeling.

Unit-IV: Pricing Decision: Factors influencing price determination, Pricing strategies: Skimming and Penetration pricing.

Unit-V: Promotion and Distribution: Promotion Mix - Advertising - Publicity – Public relations - Personal selling and Direct marketing - Distribution Channels – Online marketing.

References:

1. Philip Kotler, Marketing Management, Prentice Hall of India.
2. Philip Kotler & Gary Armstrong, Principles of Marketing, Pearson Prentice Hall
3. Stanton J. William & Charles Futrel, Fundamentals of Marketing, McGraw Hill Company
4. V.S. Ramaswamy S. Nama Kumari, Marketing Management – Planning, McMillan

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

VI SEMESTER

DSC 2G 6.2

Goods & Service Tax Fundamentals

Objective: The objective of the paper is to equip the student with various fundamental aspects of Goods and Services Tax.

Unit I:Introduction: Overview of GST - Concepts – Limitations of VAT – Need for Tax Reforms - Justification for introduction of GST - Shortcomings and advantages at the Central Level and State Level on introduction of GST-Process of Introduction of GST - Constitutional Amendments.

Unit II: GST: Principles – Models of GST: Austrlian, Candian, Kelkar-Shah – Bagchi-Poddar -Comprehensive structure of GST model in India: Single, Dual GST–Transactions covered under GST.

Unit-III: Taxes and Duties: Subsumed under GST - Taxes and Duties outside the purview of GST: Tax on items containing Alcohol – Tax on Petroleum products - Tax on Tobacco products - Taxation of Services

Unit-IV: Inter-State Goods and Services Tax: Major advantages of IGST

Model – Interstate Goods and Service Tax: Transactions within a State under GST – Interstate Transactions under GST - Illustrations.

Unit-V: Time of Supply of Goods & Services: Value of Supply - Input Tax Credit – Distribution of Credit -Matching of Input Tax Credit - Availability of credit in special circumstances- Cross utilization of ITC between the Central GST and the State GST.

References:

1. Goods and Services Tax in India – Notifications on different dates.
2. GST Bill 2012.
3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority, Ministry of Law and Justice, New Delhi, the 12thApril, 2017.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V I SEMESTER

DSC 3G 6.3

Management Accounting

Objective: The objective of this paper is to provide an understanding of techniques of Management Accounting for Managerial decision Making.

Unit–I: Management Accounting: Interface with Financial Accounting and Cost Accounting - Financial Statement analysis and interpretation:– Common size analysis and trend analysis (Theory and problems).

Unit–II: Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability (Theory and problems).

Unit–III: Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (Theory and problems).

Unit–IV: Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement - Uses and limitations of cash flow analysis (Theory and problems).

.Unit–V: Break-Even Analysis: Calculation of Break-even point - Uses and limitations – Contribution - Margin of safety – (Theory and Problems).

References:

1. S.N. Maheswari, A Textbook of Accounting for Management, S. Chand Publishing, New Delhi.
2. I.M Pandey, —Management Accounting, Vikas Publishing House, New Delhi,
3. Shashi K. Gupta & R.K. Sharma, —Management Accounting: Principles and Practicell, Kalyani Publishers, Ludhiana.
4. Jawahar Lal, Accounting for Management, Himalaya Publishing House, New Delhi.
5. Charles T. Horngren, et.al, —Introduction to Management Accounting, Person EducationIndia, New Delhi, 2002.
6. Murthy & Guruswamy – Management Accounting, Tata McGraw Hill, New Delhi.
7. Dr. Kulsreshtha & Gupta – Practical problems in Management Accounting.
8. Bhattacharya, D., —Management Accounting, Pearson Education India, New Delhi.
9. S.P. Gupta – Management Accounting, S. Chand Publishing, New Delhi.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V I SEMESTER

DSC F 6.4

Web Technology

Unit-I: Introduction: HTML, XML, and WWW, Topologies, Bus, Star, Ring,

Hybrid, Tree, LAN, WAN, MAN. **HTML:** Basic HTML, Document body, Text, Hyper links, Adding more formatting, Lists, Tables using colors and images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading.

Unit-II: Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III: Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions.

Unit-IV: Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events.

Unit-V: DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images, multiple pages in single download, text only menu system.

Reference Books

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.0
4. Web Technology, PHI Publications.

K V R Govt. College for Women (A) KURNOOL

DEPARTMENT OF COMMERCE

V I SEMESTER

6.5 Tally Accounting Software

Objective: The objective of this paper is to provide an overview of various types of accounting software and to give in-depth knowledge of Tally Accounting software.

Unit-I: Introduction to Tally: Introduction, Software versions of Tally, Terminology related to Accounts credit & Debit, Journal, Ledger, Voucher, Group etc., Difference between Manual Accounting and Accounting Packages. Features and advantages of Tally.

Unit-II: Introduction of Tally Software, Creation of a company, Gateway of Tally, Accounts Information, Groups, pre defined Groups, Creation of New Groups, Creation of sub Group.

Unit-III: Ledgers, Ledger Creation – Single and multiple Ledgers, Displaying altering Ledgers, configure Ledger, Stock Ledger, Ledgers and their Group Allocation.

Unit-IV: Vouchers –types of vouchers – recording of vouchers – entry of payment voucher, Receipt voucher, sales voucher, purchase voucher, Journal Voucher, Contra Voucher, Debit & Credit Note. Creating New Voucher types, customizing the Existing voucher types, Alternation of Voucher, Deletion of Voucher.

Unit-V: Final Accounts: Customizing the final accounts – Profit and Loss Account, Balance Sheet. Key board shortcuts in Tally. Generating the Reports from Tally, Trial Balance, Account Books, Sales, Purchase, Journal Registers, Statement of Accounts, Day Book, List of Accounts.

Reference Books:

1. K. Kiran Kumar, Tally ERP9.
2. Tally 9 In Simple Steps, Kogent solutions Inc., John Wiley & Sons, 2008.
3. Narmata Agarwal, Financial Accounting on Computers Using Tally, Dreamtech Press, 2000.
4. Tally 9.0, Google eBook, Computer World.
5. Vikas Gupta, Comdex Computer and Financial Accounting with Tally 9.0, 2007.
6. Tally ERP 9 Made Simple Basic Financial Accounting, BPB Publisher.
7. Avichi Krishnan, Tally ERP 9 for Real Time Accounting, Book Ganga.

Computer Applications

ANNEXURE - IV

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year –Vth Semester.

Part – II : COMPUTER APPLICATIONS

Paper V :Data BaseManagement System

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II: File-Based System, Drawbacks of File-Based System , DBMS Approach, Advantages of DBMS, Data Models , Components of Database System, Database Architecture, DBMS Vendors and their Products.

Unit-III: Entity–Relationship Model: Introduction, The Building Blocks of an Entity Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD'S Rules, Relational Data Model , Concept of ,Relational Integrity.

Unit-IV: Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit -V: PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor , Procedure, Function ,Packages ,Exceptions Handling, Database Triggers, Types of Triggers.

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. David Kruglinski, Osborne, Data Management System McGraw Hill Publication
3. Shgirley Neal and Kenneth LC Trunik Database Management Systems in Business – PHI.
4. Godeon C. EVEREST, Database Management – McGraw Hill Book Company.
5. MARTIN, Database Management – Prentice Hall of India, New Delhi.
6. Bipin C. Desai, —An Introduction to Database Systemsll, Galgotia Publications.
7. Korth, Database Management systems.
8. Navathe, Database Management systems.
9. S.Sumathi, S.Esakkirajan, Fundamentals of Relational Database Management Systems

ANNEXURE – VI

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – Vth Semester.

Part – II : COMPUTER APPLICATIONS

Paper VI: Web Technologies

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Introduction: HTML, XML, and WWW, Topologies, Bus, Star, Ring, Hybrid, Tree, LAN, WAN, MAN. **HTML:** Basic HTML, Document body, Text, Hyper links, Adding more formatting, Lists, Tables using colors and images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading.

Unit-II: Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III: Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions.

Unit-IV: Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events.

Unit-V: DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images, multiple pages in single download, text only menu system.

Reference Books

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.0
4. Web Technology, PHI Publications.

ANNEXURE – VII

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

Paper VII: Computer Networks

No. of Hours Per Week : 03

Max. Marks: 75.

UNIT – I

Introduction: Uses of Computer Networks, Network Hardware, Network Software, Reference Models, Example Networks.

The Physical Layer: The Theoretical Basis for Data Communication, Guided Transmission Media, Wireless transmission, the public switched telephone network

UNIT – II

The Data Link Layer: Data Link Layer Design Issues, Error Detection and Correction, Sliding Window Protocols.

The Medium Access Control Sub-layer: The channel allocation problem, Multiple Access Protocols, Ethernet, Data Link Layer Switching.

UNIT – III

The Network Layer: Network Layer Design Issues, Routing Algorithms, Congestion control algorithms, Quality of Service.

Internet Working, The Network Layer in the Internet

UNIT – IV:

The Transport Layer: The Transport Service, Elements of Transport Protocols, Congestion Control Algorithms, The Internet Transport Protocols, The Internet Transport Protocols: TCP, Delay Tolerant Networks.

UNIT – V:

The Application Layer: DNS – The Domain Name System, Electronic Mail, The World Wide Web, Real Time Audio & Video, Content Delivery & Peer-to-Peer.

Reference Books:

1. Andrew S. Tanenbaum, “Computer Networks”, Fifth Edition, Pearson Education.
2. Bhushan Trivedi, Computer Networks , Oxford University Press
3. James F.Kurose, Keith W.Ross, “Computer Networking”, Third Edition, Pearson Education
4. Behrouz A Forouzan, “Data Communications and Networking”, Fourth Edition, TMH (2007).
5. Kurose & Ross, “**COMPUTER NETWORKS**” – A Top-down approach featuring the Internet”, Pearson Education – Alberto Leon – Garciak.

ANNEXURE – VIII

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

(Cluster)Paper VIII: Elective- 1: Cloud Computing

No. of Hours Per Week : 03

Max. Marks: 75.

Unit 1

Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service, Broad network access, Location independent resource pooling, Rapid elasticity, Measured service

Unit II

Cloud scenarios – Benefits: scalability, simplicity, vendors, security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

Unit III

Cloud architecture: Cloud delivery model – SPI framework , SPI evolution, SPI vs. traditional IT Model

Software as a Service (SaaS): SaaS service providers – Google App Engine, Salesforce.com and google platform – Benefits – Operational benefits - Economic benefits – Evaluating SaaS Platform as a Service (PaaS): PaaS service providers – Right Scale – Salesforce.com – Rackspace – Force.com – Services and Benefits

Unit IV

Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2, GoGrid – Microsoft soft implementation and support – Amazon EC service level agreement – Recent developments – Benefits Cloud deployment model : Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing

Unit V

Virtualization: Virtualization and cloud computing - Need of virtualization – cost, administration, fast deployment, reduce infrastructure cost – limitations - Types of hardware virtualization: Full virtualization - partial virtualization - para virtualization - Desktop virtualization: Software virtualization – Memory virtualization - Storage virtualization – Data virtualization – Network virtualization Microsoft Implementation: Microsoft Hyper V – Vmware features and infrastructure – Virtual Box - Thin client

Reference Books

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte, Robert Elsenpeter TATA McGraw- Hill , New Delhi – 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti, University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammarai selvi, TMH

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

(Cluster)Paper VIII: Elective-2: e- Commerce

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Introduction to E-Commerce: Scope, Definition, e-Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce. Business Strategy in an Electronic Age: Supply Chains, Porter's Value Chain Model, Inter Organizational Value Chains, Competitive Strategy, First Mover Advantage - Sustainable Competitive Advantage, Competitive Advantage using E-Commerce - Business Strategy.

Unit-II: Business-to-Business Electronic Commerce: Characteristics of B2B EC, Models of B2B EC, Procurement Management by using the Buyer's Internal Market place, Just in Time Delivery, Other B2B Models, Auctions and Services from traditional to Internet Based EDI, Integration with Back-end Information System, Role of Software Agents for B2B EC, Electronic marketing in B2B, Solutions of B2B EC, Managerial Issues, Electronic Data Interchange (EDI), EDI: Nuts and Bolts, EDI and Business.

Unit-III: Internet and Extranet : Automotive Network Exchange, Largest Extranet, Architecture of the Internet, Intranet and Extranet, Intranet software, Applications of Intranets, Intranet Application Case Studies, Considerations in Intranet Deployment, Extranets, Structures of Extranets, Extranet products and services, Applications of Extranets, Business Models of Extranet Applications, Managerial Issues. Electronic Payment Systems: Issues and Challenges.

Unit-IV: Public Policy: From Legal Issues to Privacy : Legal Incidents, Ethical and Other Public Policy Issues, Protecting Privacy, Protecting Intellectual Property, Free speech, Internet Indecency and Censorship, Taxation and Encryption Policies, Other Legal Issues: Contracts, Gambling and More, Consumer and Seller Protection in EC.

Unit-V: Infrastructure For EC : Network of Networks, Internet Protocols, Web- Based client/Server, Internet Security, Selling on the Web, Chatting on the Web, Multimedia delivery, Analyzing Web Visits, Managerial Issues, Equipment required for establishing EC Sites – Problems in Operation – Future of EC.

Reference Books

1. David Whiteley, "E-Commerce", Tata McGraw Hill, 2000.
2. E Business by Parag Kulakarni and Sunitha Jahirabadkar from Oxford University Press.
3. E Business by Jonathan Reynolds from Oxford University Press.
4. Eframi Turban, Jae Lee, David King, K. Michael Chung, "Electronic Commerce", Pearson Education, 2000.
5. R. Kalakota and A. B. Whinston, Frontiers of Electronic Commerce, Addison Wesley.
6. David Kosiur, Understanding Electronic Commerce, Microsoft Press.
7. Soka, From EDI to Electronic Commerce, McGraw Hill.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.A(CA&CE) Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

(Cluster)Paper VIII:Elective-3 : Unix

No. of Hours Per Week : 03

Max. Marks: 75.

Unit I

Overview of UNIX Operating System, basic features of Unix operating System, File Structure, CPU Scheduling, Memory Management, File System Implementation of Operating System Functions in UNIX.

Unit II

Starting Of Unix and Text Manipulation and user-to-user communication User Names and Groups, Logging In, Format of Unix Commands, Changing your password, Unix Documentation.

Unit III

Files and Directories:, File permission, Basic Operation on Files, Changing Permission Modes, Standard files , Processes Inspecting Files, Operating On Files, Printing Files, Rearranging Files, Sorting Files, Splitting Files, Translating Characters, On line communication, Off line communication.

Unit IV

vi Editors-General characteristics, Adding text and Navigation, changing text, searching for text, copying and Moving text, Features of Ex, Line Editors Ex and Ed, Stream editor SED, changing several file s in SED, AWK.

Unit V

Shell Programming: Programming in the Bourne and C-Shell, Wild Cards, Simple Shell program, variables, Programming Construct, Interactive Shell scripts, Advanced Features, Unix Compiler, Maintaining program System Administration Define system Administration, Booting the system, Maintaining User Accounts, File System, and special files, Backup and Restoration.

References Books:

1. Unix and shell Programming by B.M Harwani, OXFORD University Press
2. Unix Concept and application- Sumitabhadas
3. Unix Shell Programming-Yashwant Kanetkar
4. Unix Programming Environment- RobPike
5. Unix in a Nutshell- Donill Gily

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.Com. Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – Vth Semester.

Part – II : COMPUTER APPLICATIONS

Paper IV: Data Base Management System

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II: File-Based System, Drawbacks of File-Based System , DBMS Approach, Advantages of DBMS, Data Models , Components of Database System, Database Architecture, DBMS Vendors and their Products.

Unit-III: Entity–Relationship Model: Introduction, The Building Blocks of an Entity–Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD'S Rules, Relational Data Model , Concept of ,Relational Integrity.

Unit-IV: Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit -V: PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor , Procedure, Function ,Packages ,Exceptions Handling, Database Triggers, Types of Triggers.

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. David Kruglinski, Osborne, Data Management System McGraw Hill Publication
3. Shgirley Neal and Kenneth LC Trunik Database Management Systems in Business – PHI.
4. Godeon C. EVEREST, Database Management – McGraw Hill Book Company.
5. MARTIN, Database Management – Prentice Hall of India, New Delhi.
6. Bipin C. Desai, —An Introduction to Database Systems, Galgotia Publications.
7. Korth, Database Management systems.
8. Navathe, Database Management systems.
9. S.Sumathi, S.Esakkirajan, Fundamentals of Relational Database Management Systems

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.Com. Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – Vth Semester.

Part – II : COMPUTER APPLICATIONS

Paper V: E- Commerce

No. of Hours Per Week : 03

Max. Marks: 75.

Unit – I : INTRODUCTION- COMMERCE

Definition-Scope of E-Commerce (Ec)-Advantages and disadvantages of E- Commerce-Business to Business (B2B)- Business to Consumers (B2C) The Frame work of E.-Commerce- Electronic Markets Information Technology and Business.

Unit- II : THE INTERNET

Evolution of the Internet —Internet for Business -Category of networks- World Wide Web (WWW)- Internet Service — Concerns about the internet- Building own website.

Unit- III : ELECTRONIC MARKET

Procedures for Internet shopping-Web advertisement - ordering journals electronically - Selling on the web. E-Commerce for service industries Broker based services travel and Tourism services, Employment placement Element the job market —Trading stocks online.

Unit- IV : ELECTRONIC PAYMENT SYSTEMS

Security schemes in Electronic payment systems-Electronic Credit card systems on the intern-Electronic fund Transfer and Debit cards on the Internet Stored —Value cards and Ecash

Unit- V : E-SECURITY

Internet Protocols — Internet Security — Encryption digital signatures — Secure Electronic Transactions — Firewalls : Access Control.

Reference Books:

1. C,S,V.Murthy, Electronic Commerce, Himalaya Publishing House Mumbai
2. Efrain Turban, Jay lee. David king and H.Michel Chung. Electronic Commerce A Managerial perspective. Pearson Education Asia
3. Kamalesh K Baja and Debjani Nag E-Commerce. Tata Mc Graw-Hill Publish Company Limited. New Delhi.

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.Com. Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

Paper VI: Web Technologies

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Introduction: HTML, XML, and WWW, Topologies, Bus, Star, Ring, Hybrid, Tree, LAN, WAN, MAN. **HTML:** Basic HTML, Document body, Text, Hyper links, Adding more formatting, Lists, Tables using colors and images. **More HTML:** Multimedia objects, Frames, Forms towards interactive, HTML document heading.

Unit-II: Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III: Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions.

Unit-IV: Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events.

Unit-V: DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images, multiple pages in single download, text only menu system.

Reference Books

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.0
4. Web Technology, PHI Publications.

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.Com. Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER APPLICATIONS

Paper VII: Tally Accounting Software

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I: Introduction to Tally: Introduction, Software versions of Tally, Terminology related to Accounts credit & Debit, Journal, Ledger, Voucher, Group etc., Difference between Manual Accounting and Accounting Packages. Features and advantages of Tally.

Unit-II: Introduction of Tally Software, Creation of a company, Gateway of Tally, Accounts Information, Groups, pre defined Groups, Creation of New Groups, Creation of sub Group.

Unit-III: Ledgers, Ledger Creation – Single and multiple Ledgers, Displaying & altering Ledgers, configure Ledger, Stock Ledger, Ledgers and their Group Allocation.

Unit-IV: Vouchers –types of vouchers – recording of vouchers – entry of payment voucher, Receipt voucher, sales voucher, purchase voucher, Journal Voucher, Contra Voucher, Debit & Credit Note. Creating New Voucher types, customizing the Existing voucher types, Alternation of Voucher, Deletion of Voucher.

Unit-V: Final Accounts: Customizing the final accounts – Profit and Loss Account, Balance Sheet. Key board shortcuts in Tally. Generating the Reports from Tally, Trial Balance, Account Books, Sales, Purchase, Journal Registers, Statement of Accounts, Day Book, List of Accounts.

Reference Books:

1. K. Kiran Kumar, Tally ERP9.
2. Tally 9 In Simple Steps, Kogent solutions Inc., John Wiley & Sons, 2008.
3. Narmata Agarwal, Financial Accounting on Computers Using Tally, Dreamtech Press, 2000.
4. Tally 9.0, Google eBook, Computer World.
5. Vikas Gupta, Comdex Computer and Financial Accounting with Tally 9.0, 2007.
6. Tally ERP 9 Made Simple Basic Financial Accounting, BPB Publisher.
7. Avichi Krishnan, Tally ERP 9 for Real Time Accounting, Book Ganga.

Communicative English

SEMESTER-V

III Year B A Communicative English

Paper ~~III~~ V

1. Essay Writing

- a Coherence
- b Preparation of an outline
- c Advancing for and against argument
- d Structure of ideas
- e Writing around a theme
- f Mechanics of writing

2. Letter Writing

- a Layout
- b Principles
- c Enquiries and reports
- d Business Correspondence
- e Banking Correspondence

3. Official and Commercial Correspondence

- a Placing Orders
- b Making Complaints
- c Agenda, Memoranda, and Minutes Preparation
- d Acquiring the right register for these tasks
- e Calling for tenders, quotations, Orders.
- f Writing Classified advertisements (matrimonial, sale, purchase, lost and found etc)

4. Communication situations formal and informal

- a Creation of a variety of day today situations in which written and communication abilities are promoted
- b Making up a story from hints and given vocabulary items.

5. Oral Examination- External/Internal

SEM-V
III year Communicative English

Paper VI

1. Report Writing

- a Business Reports
- Press Reports
- Market and exchange reports

2. Communication and Situation II

- a Training in oral communication by promoting pair work and group work
- b Graphics and Visuals Interpretation
- c The communicative value of Video in the class room. The power of the medium. The role of the learner. The variety of video material.
- d Making short extempore speeches/Expansion of an idea

3. Broadcasting Media

- a The fundamentals of Broadcasting
- b Radio as a medium of communication
- c T V as a medium of communication
- d educational T V

4. Correction of sentences

Current Affairs

Oral Examination External/Internal

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL

COMMUNICATIVE ENGLISH ---- III YEAR SYLLABUS *Common Elective*

SEMESTER --- VI

PAPER - -VII (SOFT SKILLS)

UNIT- - I SOFT SKILLS

- a) Introduction to Softskills
- b) Importance of Softskills
- c) Improving one's own Softskills

Unit - - II THINKING SKILLS

- a) Critical and Creative Skills
- b) Personal and Interpersonal skills

Unit - - III BODY LANGUAGE

- a) Uses of Body Language
- b) Types of Body Language
- c) Improving Body Language

Unit - - IV POSITIVE ATTITUDE

- a) Introduction - - Meaning , features ,Attitude & behaviour
- b) Formation of attitudes
- c) Change of attitudes
- d) The power of positive attitude
- e) Developing Positive attitude
- f) Overcoming Negative attitude

Unit - - V ART OF SPEAKING

- a) Art and Importance of Speaking
- b) Benefits of Speaking
- c) Tips to improve Speaking skills

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(AUTONOMOUS)

(Effective from 2015-2018 Batch)
III YEAR B.A. COMMUNICATIVE ENGLISH

SEMESTER-VI

CLUSTER ELECTIVE PAPER-I : EMPLOYABILITY SKILLS

SYLLABUS

UNIT-I: RESUME

- Introduction
- Types of Resume
- DO'S and Dont's
- Covering Letter

UNIT-II: STRESS MANAGEMENT

- Sources of stress
- Causes of stress
- Types of stress
- Tips for Stress Management

UNIT-III: TEAM WORK

- Introduction
- Characteristics / skills
- Advantages
- Role of team leader and team members

UNIT-IV: INTERVIEW SKILLS

- Introduction
- Types of Interviews
- Techniques/Tips
- Mock Interviews

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SYLLABUS FOR PAPER-II(UNDER CLUSTER).ELECTIVE)

LISTENING AND SPEAKING SKILLS.

VI SEMESTER

CHAPTER I - 1) What is listening?

2) Types of listening.

a) Passive Listening

b) Marginal listening

c) Projecting Listening.

d) Sensitive/Empathetic Listening e)Active Listening

CHAPTER- II. a) Barriers of effective listening.

b) Techniques to overcome Listening Obstacles.

CHAPTER- III. Activities of Listening.

a) Listening to TV.

b) Listening to Seminars

c) Listening to announcements at Railway Station/Bus station etc

d) Listening to great personalities speeches in the form CD's.

e) Make announcements about missing cases.

CHAPTER- IV .Dialogue Practice - Activity in the Classroom.

CHAPTER -V. Speaking Skills.

a) Introducing Yourself

b) Seeking permission

c) Refusing Requests.

d) Accepting and Declining Invitations in a polite way.

e) Role play

f) Group Discussions.

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SYLLABUS FOR PAPER-III (UNDER CLUSTER ELECTIVE) 3

B.A. III YEAR COMMUNICATIVE ENGLISH

SEMESTER - IV

READING AND WRITING SKILLS.

(LANGUAGE SPECIFIC COURSE)

CHAPTER- I: Reading Skills.

- a) Purpose of Reading
- b) Goals of Reading
- c) Before Reading
- d) During Reading
- e) After Reading.

CHAPTER -II. Reading Comprehension.

- a) What are the tips for Reading Comprehension?
- b) Reading the passage and making answers.

CHAPTER -III. Techniques of Reading Skills.

- a) Skimming
- b) Scanning
- c) Intensive Reading
- d) Extensive Reading

CHAPTER- IV. Writing Skills.

- a) punctuation in writing
- b) Format of a Notice.
- c) Composing Invitations.

CHAPTER-V. Cohesive Devices/Linkers

Rural Development
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B.A.RURAL DEVELOPMENT
Academic Year 2017-18

Paper-V: Rural Development Planning and Management

Unit-1

Concept of Development Planning – Overview of Planning for Rural Development in India – Multi-level Planning – District Level Planning – Importance of Micro planning.

Unit-2

Definition and Characteristics of Project – Types of Projects – Role of Projects in Overall Development – Need for Project Approach to Rural Development – Concept of Project Cycle – Phases in Participatory Project Cycle Management.

Unit-3

Rural Development Administration in India – Structure and Functions of Rural Development Administration at the Central, State and District levels – Role of District Rural Development Agency – Role of District Collector.

Unit-4

Role of NGOs in Rural Development – Role of PRIs in Rural Development – Role of Community Based Organizations in Rural Development – Interface between Government Organizations and Non-Government Organizations.

Unit-5

Participatory Approaches for Rural Development : Rapid Rural Appraisal – Participatory Rural Appraisal – Tools of PRA : Wealth Ranking – Timeline – Transect – Seasonality – Social Mapping – Resource Mapping – Venn diagram – Focus Group Discussion.

Books and References

1. Robert Chambers : Rural Development – Putting the Last First
 2. B.C.Chattopadhyay : Rural Development Planning in India.
 3. S.Venugopal Reddy :Multi – level Planning
 4. R.C. Arora :Integrated Rural Development
 5. V.A. Pai Panandikar : Development Administration in India.
 6. Rajasekhar D : Poverty Alleviation Strategies of NGOs, Concept, 2004.
 7. Price Gittinger : Economic Analysis of Agricultural Projects
 8. G. Sreedhar and : Rural Development in India : Strategies and Processes,
D.Rajasekhar Concept Publishing House, New Delhi, 2014.
- Publications of A.P.Telugu Academy
Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

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B.A.RURAL DEVELOPMENT
Academic Year 2017-18

Paper-VI: Rural Markets

Unit-1

Rural Credit Markets: Nature and Significance of Rural Credit – Sources of rural Credit : Institutional and Non- Institutional – Cost of Credit – Rural Indebtedness: Extent , Causes and Consequences – Role of RBI and NABARD in Rural Credit.

Unit-2

Input Markets: Sources of Input Supply : Government and Private Sources – Seed, Fertilizer and Plant Protection Chemicals – Problems confronted by the Farmers in obtaining and using Inputs – Developing Efficient Input Markets – Land and Labour Markets.

Unit-3

Commodity Markets: Nature and Scope of Agricultural Marketing – Cooperative Marketing Societies – Regulated Markets – Minimum Support Prices for Agricultural Commodities.

Unit-4

Implications of Globalization for Agricultural Marketing: World Trade Organization – Trade Liberalization – Agricultural Protection and Subsidies in Developed Countries.

Unit-5

Linking Commodity and Consumer Markets – Apni Mandi Scheme / Rythu Bazars- Shandies – Linking Producers to Modern Supply Chains – Producer Organizations in the context of Value chain and Globalization – Role of Corporate Sector in Retail Marketing.

Books and References

1. A P Gupta : Marketing of Agricultural Produce in India
 2. S S Acharya & N.W.Agarwal: Agricultural Marketing in India
 3. Shamin Ahmed : Rural Marketing in India
 4. H.Belshaw :Agricultural Credit in Economical Underdeveloped Countries
 5. SSM Desai : Rural Banking in India
 6. AM Khusro : Agricultural Credit Review Committee Report
 7. K Bhaskar : “Need for Linking of Regulated Markets with Cooperative Marketing Societies” Cooperator ,Aug 1989.
 8. K.Bhaskar : “Streamlining the Regulated Market System”,Kurukshetra ,Aug 1994
- Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

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B.A.RURAL DEVELOPMENT
Academic Year 2017-18

Paper-VII – Natural Resources Management

Unit-1

Land Use Pattern in India: Trends and Influencing Factors – Problems of Soil Erosion , Land Degradation and Desertification – Participatory Watershed Development Programme.

Unit-2

Water Resources: Trends in Use and Development of Demand – Challenges and Strategies for Sustainable Use of Water resources – National Water policy of India.

Unit-3

Source of Irrigation – Trends in Irrigation Development in India – Problems and Prospects of Tank Irrigation – Concept and Importance of Micro Irrigation – Transfer of Irrigation Management to Farmers.

Unit-4

Forest Resources Use in India: Challenges for Sustainability Concept and Models of Social Forestry – Participatory Forest Management – Non- Timber Forest Produce – Role of Girijan Development Corporation

Unit-5

Common Property Resources and Livelihoods of Poor – Problems of CPRs- Strategies for Sustainable Use of CPRs.

Books and References

1. David Pearce : Economics of Natural Resources
 2. Jyothi Prakash & S Reddy : Sustainable Regeneration of Degraded Lands
 3. Katar Sing : Managing Common Pool Resources – Principles and Case Studies
 4. V. Reddappa Reddy : “Watershed Development Projects for Drought Prone Area”, Moving Technology , Oct-Dec 1996
 5. Robert Chambers , N.C. Saxena : To the Hands of the Poor : Water and Trees and Tushar Shah
 6. Satish and Sundar : Peoples Participation and Irrigation Management : Experiences , Issues and options
 7. G.Sreedhar : Tank Irrigation in Semi – Arid Zones
 8. B.Chaudhuri and A K Miti : Forest and Forest Development in India
 9. V.Reddappa Reddy : “People’s Participation and Forest Management in India:Few Emerging Issues”,Asia –Pacific Journal of Rural Development ,January 2000
- Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

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B.A.RURAL DEVELOPMENT

Academic Year 2017-18

Paper-VIII- Human Resources Development

Unit-1

Human Resource Development: Concept – Need for HRD – Elements of HRD – HRD in Rural Sector

Unit-2

Human Capital Formation: Importance – Efforts and Achievements in Investment for raising Nutritional and Educational Standards – Significance of Capacity Building for Rural Development

Unit-3

Dimensions of HRD for Rural Development: Health – Nutrition – Education – Skill Development – Importance of HRD in Agriculture and Allied Activities , Rural Industries and Rural Service Sector.

Unit-4

Human Development Index – Concept – Importance –Components – Measurement-Construction of Human Development Index at the State and District level: Factors Influencing HDI.

Unit-5

Institutional Arrangement for the Promotion of HRD – Framers Training Centers Krishi Vignan Kendras – Role of CAPART,NIRD and KVIC – Educational Programmes for Promoting HRD: Vocational Education – Non – Formal Education – Jana Sikshana Nilayams-Capacity Building of Rural People.

Books and References

1. M.R.Mehta :Human Resource Development Planning with Special Reference to Asia
2. V.A.Alexander :Human Capital Approach to Economic Development
3. ILO :Employment Promotion with Special Reference to Rural Areas
4. T.George : Human Resources in India
5. G. Sreedhar and : Rural Development in India : Strategies and Processes,
D.Rajasekhar Concept Publishing House, New Delhi, 2014.
6. V P Batra : The Economic and Human Resources
7. Gyan Chand : Population in Prespective
8. K.Govindappa :Adult Education – Impact of National Literacy Mission
9. UNDP : human Development Reports Publications of A.P.Telugu Academy
Jounals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

Advance Telugu

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$$\Box \delta \exists T \omega \Box \dots \sigma \Psi \quad \overline{06}, \Box \parallel \Box \sigma \mathfrak{S} T \quad \overline{7} \left(\mu \vdash \dots \psi \Box \quad \overline{3} \right) \\ X''\theta | \Box < \Box \kappa \subseteq \zeta \text{---}''^{\text{TM}} \langle \leftrightarrow + \quad \overline{\vdash} \leq \Rightarrow \rangle \therefore T$$

$$\varphi \langle T \vee \Box \{ \wedge \quad \overline{1} \\ X''\theta | \Box < \Box \exists X'' \odot \theta \varepsilon \downarrow Z \lhd \leq \sigma \mathfrak{S} \Delta \quad \overline{X''}\theta | \Box < \Box \exists X'' \odot \theta + \varepsilon \therefore ' \mid | \Box \varphi \setminus \vee \cup H \Box \\ \therefore T, X''\theta | \Box < \Box \exists X'' \odot \theta \vee < \int \Box \leftrightarrow \varphi \langle T \theta + \Box \mid \Pi \Box +^{\text{TM}} \langle \varepsilon \sigma \mathfrak{S} \oplus \leq \Box \cup \rangle \angle \theta \mid \\ \beta \subseteq \# \langle \leftrightarrow \beta \subseteq \Xi \int \subset^{\text{TM}} \langle T \leftrightarrow \therefore \lhd \leq \Box \omega \text{---}, X''\theta | \Box < \Box \kappa \subseteq \zeta \text{---}''^{\text{TM}} \Box \leftrightarrow \Box \lhd \int, \infty \\ \omega \text{---} \dots \kappa \subseteq \zeta \text{---}''^{\text{TM}} \Box \leftrightarrow \Box \oplus \leq \Box + \& \rfloor^{\text{TM}} \Box \sigma \mathfrak{S}^{\text{TM}} \Box \varepsilon \vee \leftrightarrow \therefore T$$

$$\varphi \langle T \vee \Box \{ \wedge \quad \overline{2} \\ X''\theta | \Box < \Box \neq \rangle \varphi \setminus \therefore T, \lhd \leq < \div \Box \neq \rangle \varphi \langle \vee \therefore T \quad \overline{\vdash} \therefore \lhd \leq \Box \Delta'' \therefore T \quad \overline{\varepsilon} \downarrow Z \lhd \leq \sigma \mathfrak{S} \\ \Delta, \beta \Sigma \sigma \Box \Delta \int \lhd \leq \lhd \leq < \div \Box \neq \rangle \varphi \langle \vee \therefore T \quad \overline{\vee} < \Box T \textcircled{\mathcal{R}} \Leftrightarrow^{\text{TM}} \langle \sigma \mathfrak{S} \delta \Box \lhd \leq < \div \Box \\ \neq \rangle \varphi \langle \vee \therefore T \quad \overline{\lhd} \leq \sigma \mathfrak{S} T \Delta \sigma \mathfrak{S} \delta \Box \lhd \leq < \div \Box \neq \rangle \varphi \langle \vee \therefore T, M \sigma \mathfrak{S} > \pm < \div \Box \therefore \\ T \quad \overline{\delta} \Box \cap \sigma \mathfrak{S} \vee | \Box \delta \Box \cap \vee \int'' \psi \Box \therefore T \quad \overline{|} \Box \{'' \Box \{ \int M \sigma \mathfrak{S} \# \langle \int \mid^{\text{TM}} \quad \lhd \pm \geq \\ \varepsilon T \sigma \Box E \lhd \leq < \div \Box, \vee \_ \textcircled{\mathcal{R}} * \varphi \langle T T < \Box \emptyset + \psi \setminus T T < \Box \setminus \supset \Pi \theta \exists.$$

$$\varphi \langle T \vee \Box \{ \wedge \quad \overline{3} \\ X''\theta | \Box < \Box \sigma \mathfrak{S} \vee | \Box \lhd \pm \therefore T \quad \overline{\vee} \varepsilon T \Box \{'' \geq \therefore T, M \sim \int H \Box \geq \lhd \pm \therefore T, \varphi \langle T \lhd \leq \\ \Box > \pm H \Box \therefore T, > \bullet + \angle \mathfrak{R} \sigma < \Box T \uparrow \therefore T, | \Box > \bullet \{ \int \psi \rfloor \chi \subseteq \therefore T, \Box T \mid \sigma \mathfrak{S} \lhd \leq < \div \Box \therefore \\ T, \quad > \pm \sigma \mathfrak{S} \& \Box, \Box \geq T', \exists \exists < \int \Box X''\theta | \Box < \Box \lhd \leq \Rightarrow'' \sigma \mathfrak{S} \vee \beta \subseteq \therefore T \\ \varphi \langle T \vee \Box \{ \wedge \quad \overline{4}$$

$$X''\theta|\Box<\Box\delta\Box+\perp^{\text{TM}}\langle\lhd\pm\sigma\mathfrak{S}T\therefore T\quad\overline{\quad}\vdash\#(T\subset\lhd\leq\oplus\leq\Box+\geq T',\Xi(\sigma\mathfrak{S}<\Box\lhd\pm+|&\Box T,\Box\varepsilon|\therefore T,M\sigma\mathfrak{S}\varepsilon TT\omega\text{---}\dots\psi\Box\sigma\mathfrak{S}T,;\sigma\mathfrak{S}\theta\Box\therefore\psi\Box\sigma\mathfrak{S}T>=\therefore'\delta\Box T<\Box T\Uparrow\therefore,<\Box\delta\Box\sigma\mathfrak{S}T\therefore\cup+>\pm\therefore T\psi(TT))$$

$$\Box\delta\in\omega\Box\wr\wedge^{\text{TM}}\lfloor\therefore T>\bullet T\\ \Box\delta\exists T\omega\Box\dots\sigma\Psi\quad\overline{06},\Box\|\Box\sigma\mathfrak{S}T\quad\overline{8}\\ \cup\sigma\mathfrak{S}\Box*\cup+$$

- $\delta\Box\varepsilon\sqrt{\#}\Box\sigma\mathfrak{S}\exists\Box\varepsilon T\phi(T+(\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box))$
 $\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box\Box\sigma\mathfrak{S}\cap\#(\theta+, \sigma\mathfrak{S}\lhd\pm\therefore T&(\prod\mathfrak{R}\sigma\lhd]\dots\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box,\psi(\mathfrak{R}\sigma^{\text{\textcircled{R}}}\wr\wedge\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box,H\Box H\Box\psi(\mathfrak{R}\sigma^{\text{\textcircled{R}}}\wr\wedge\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box,H\Box H\Box\psi(\mathfrak{R}\sigma^{\text{\textcircled{R}}}\wr\wedge\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box),\Box+\geq\sigma\Psi\varepsilon\sigma\mathfrak{S}\diamond\theta\wr\wedge\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box\Box+|\{\text{"}|\Box\sigma\mathfrak{S}\diamond\theta\wr\wedge\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box\Omega\{\wedge&\wp\sigma\Psi\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box\varepsilon\sqrt{\delta\tau}\lhd\leq\varepsilon T\sqrt{\leftrightarrow}\Box\neq\lhd\omega\Box H\Box$
- $\zeta\sigma\mathfrak{S}\Box*\cup+$

$$5. \quad \delta \square \varepsilon \sqrt{\# \square} \sigma \mathfrak{I} \therefore \# \rfloor \sigma \mathfrak{I} \psi \rfloor^{\text{TM}} \langle, \beta \sqsubseteq \rfloor \Leftarrow \neq \lrcorner \varphi \langle \text{T}^{\text{TM}} \langle \cap + \quad \bar{\&} \square \quad \rangle \rangle \varphi \langle \text{T} \delta \tau. \square$$

$$\begin{aligned} & \square \delta \in \omega \square \} \wedge {}^{\text{TM}} \backslash \therefore T > \bullet T \\ & \square \delta \exists T \omega \square \dots \sigma \Psi \quad \overline{06}, \square \parallel \square \sigma \mathfrak{T} T \quad \overline{8} \\ & \square < \int \square T \square \lrcorner \leq {}^{\text{TM}} \backslash \therefore T > \bullet T \vee \int'' \chi \subseteq \square \sigma \square \square \Delta + \end{aligned}$$

1.

$$\square < \int \square T \square \lrcorner \leq {}^{\text{TM}} \backslash \therefore T \mathfrak{T} \bullet \int'' \omega \square \quad \overline{\delta} \square + \sim \int, \delta \square \varepsilon \sqrt{\theta}, * + > \bullet, \varepsilon \# \langle \theta, \\ \exists \vee \int \square \lrcorner \int \parallel \square \sigma \square \square \Delta +$$

2.

$$\begin{aligned} & \square < \int \square T \square \lrcorner \leq {}^{\text{TM}} \backslash \therefore T > \bullet T \vee \int'' \omega \square \quad \overline{\int} \lrcorner \int \varphi \langle T, \mid \beta \subseteq \Leftarrow \mid \square \sim \lrcorner \leq \therefore \square \sigma \\ & \square \square \Delta +, \square \lrcorner \leq \sigma \mathfrak{T} \square \lrcorner \leq, \delta \square \lrcorner \leq \sigma \mathfrak{T} \square \lrcorner \leq, \mid \square \mid \sigma \mathfrak{T} \Delta'' \sigma \mathfrak{T} \emptyset \lrcorner \leq, \delta \square \varepsilon \sqrt{\mid} \square \lrcorner \leq \vee \mid \\ & \square \varepsilon \sqrt{\mid} \square \lrcorner \leq \quad \mid \lrcorner \int \varphi \langle T \therefore T \end{aligned}$$

3.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T > \bullet T \psi \square \lrcorner \leq \leftrightarrow \square \sigma \square \square \Delta +, \psi \square \lrcorner \leq \leftrightarrow \vee \int \rangle < \int \square \therefore T \quad \overline{\kappa} \subseteq \varepsilon T \\ & \theta \leftrightarrow, \delta \square + \infty' \omega \square \dots, \delta \square + \varphi \langle T T \lrcorner \leq \mid, \mid \lrcorner \int \varphi \langle \sqrt{\sigma \mathfrak{T} \zeta} \text{---}''^{\text{TM}} \wr \int \varphi \langle \sqrt{\delta \square} \zeta \\ & \text{---}''^{\text{TM}} \langle \end{aligned}$$

$$\begin{aligned} & \varphi \langle T^{\text{TM}} \langle \mid < \square \sigma \mathfrak{T} \square \lrcorner \leq \psi \square \lrcorner \pm \leftrightarrow \therefore T \lrcorner \leq \sigma \mathfrak{T} \square \Delta \int, \lrcorner \leq \sigma \mathfrak{T} \mid \int \parallel \square \varphi \mid \sqrt{ > \\ & \pm \therefore T, \mid \parallel \square {}^{\text{TM}} \langle \leftrightarrow \varphi \langle \sqrt{\therefore T} \mid \square \vee \sigma \mathfrak{T} T \omega \square \vee \varphi < \int \square \lrcorner \leq, \vee \sigma \mathfrak{T} < \int \square \square < \int \square \lrcorner \leq, \\ & \lrcorner \pm \therefore \vee \varphi < \int \square \lrcorner \leq \quad \mid \parallel \square {}^{\text{TM}} \langle \leftrightarrow \varphi \langle \sqrt{\therefore T} H \square M T \square \lrcorner \leq \sigma \mathfrak{T} \Delta. \end{aligned}$$

4.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T \mathfrak{t} > \bullet T \vee'' \chi \subseteq \square < \int \square T \square \lrcorner \Upsilon \lrcorner \leq \sigma \mathfrak{T} \Delta \square \varepsilon \Xi \rangle \leftrightarrow \lrcorner \leq {}^{\text{TM}} \langle, \mid \square < \square \\ & \emptyset^{\text{TM}} \langle T \therefore T \quad \overline{\delta} \square \varepsilon T \delta \square \leftrightarrow \therefore T \quad \overline{{}^{\text{TM}}} \backslash \therefore T > \bullet T \vee \int'' \omega \square \mid \beta \subseteq \varepsilon \sqrt{\Delta \Upsilon} \lrcorner \leq \sigma \mathfrak{T} \Delta \\ & \square \mid \square \Xi \rangle \leftrightarrow \lrcorner \leq {}^{\text{TM}} \delta \square \varepsilon T \delta \square \leftrightarrow \therefore T \\ & \square < \int \square \sigma \mathfrak{T} \mid > \bullet + < \div \square \therefore T \end{aligned}$$

1.

$$\begin{aligned} & \square < \int \square T \square \lrcorner \leq \mid \beta \subseteq \varepsilon \sqrt{\Delta} \int \lrcorner \pm + \mid < \int \square \psi \square \leftrightarrow \lrcorner \leq \sigma \mathfrak{T} \Delta + \quad \overline{\varepsilon} \sigma \mathfrak{T} \alpha \blacklozenge \therefore \\ & \psi \mid + \lrcorner \leq \phi \rangle \Xi \rangle \cap \sigma \mathfrak{T} T' \end{aligned}$$

2.

$$\begin{aligned} & \square H \square \& \square T \vee \int'' \chi \subseteq \delta \square \cap \sigma \mathfrak{T} \sqrt{\mid} \square + \quad \overline{} \\ & \square \sqrt{ < \square \sigma \square E \sigma \square < \int \square \lrcorner \leq \square \omega \square \square \end{aligned}$$

3.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T > \bullet T \vee \int'' \chi \subseteq {}^{\text{TM}} \langle {}^{\text{TM}} \langle \mid \cap + \quad \overline{} \\ & \lrcorner = \varepsilon T \mid \sigma \square E \psi \int + \lrcorner \leq \geq \therefore \lrcorner \leq \square \square \Delta \sigma \square \varepsilon \vee \quad \overline{} \end{aligned}$$

4.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T > \bullet T \vee \int'' \chi \subseteq \# \langle \int \mid {}^{\text{TM}} \langle \quad \overline{} \\ & (\delta \square +) \vee \int \square \mid \sim \sigma \square E \lrcorner \leq \square \omega \square \square \varepsilon T \sqrt{\int} \mid \quad \overline{} \end{aligned}$$

5.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T > \bullet T \} \varphi \psi \mid \therefore T > \bullet T \therefore T \quad \overline{} \\ & \# \int \oplus \leq \Lambda \int \sigma \square \varepsilon \sqrt{\sigma \square} \varepsilon \vee \end{aligned}$$

6.

$$\begin{aligned} & {}^{\text{TM}} \backslash \therefore T > \bullet T \psi \square \lrcorner \leq \leftrightarrow \varepsilon T T \quad \overline{} \\ & \# \int \oplus \leq \Lambda \int \sigma \square \varepsilon \sqrt{\sigma \square} \varepsilon \vee \end{aligned}$$

$$7. \quad \psi \sqcap \& \sqcap T \lrcorner \leq \vee \int'' \sqcap \omega \sigma \sqcap \delta \sqcap T | H \sqcap \sqcap \varepsilon \vee ? \\ \varepsilon T T \beta \subseteq \varepsilon \Rightarrow / \Downarrow \sigma \mathfrak{T} + > \bullet H \sqcap \varphi \langle T \lrcorner \leq \varepsilon T \sqcap$$

$$\sqcap \delta \in \omega \sqcap \wr \wedge^{\text{TM}} \wr \therefore T > \bullet T \\ \sqcap \delta \exists T \omega \sqcap \dots \sigma \Psi \quad \overline{06}, \sqcap || \sqcap \sigma \mathfrak{T} T \quad \overline{8} \\ \text{TM} \wr \therefore T > \bullet T \vee \theta T \psi \sqcap < \sqcap +$$

$$1. \vee \theta T \psi \sqcap < \sqcap + :$$

$$\delta \sqcap \cap \sigma \mathfrak{T} \vee | \sqcap \sqcap \delta \cap \vee \int'' \psi \sqcap \therefore T, \vee \theta T \psi \sqcap < \sqcap \sqcap \sigma \mathfrak{T} \cap \# \langle \theta +, \vee \theta T \psi \sqcap < \\ \sqcap | | \sqcap \varepsilon \vee \Delta'' \therefore T, \varepsilon T \vee \therefore \vee \int'' \omega \sqcap, \therefore \lrcorner \leq \sqcap \leftrightarrow \vee \int'' \omega \sqcap, | \sqcap < \sqcap +, | \sqcap < \sqcap \sqcap + < \int \\ \sqcap +, \psi \sqcap \lrcorner \leq \leftrightarrow + \quad \sqcap | \sqcap \psi \sqcap \lrcorner \leq \leftrightarrow +, \wr \rangle K \theta + \quad \overline{1} | \sqcap \leftarrow \wr \rangle K \theta +, \vee \theta T \psi \sqcap < \sqcap + \\ \Xi / | \delta \sqcap | \varepsilon \vee, \lrcorner \leq \Rightarrow'' ?$$

$$2. \vee \theta T \psi \sqcap < \sqcap + \quad \overline{\sigma \mathfrak{T} \lrcorner \pm} \therefore T$$

$$\exists \exists < \int \sqcap \sigma \mathfrak{T} \lrcorner \pm \therefore T \vee \theta T \psi \sqcap < \sqcap \therefore T (\varepsilon T \vee \therefore \exists < \int \sqcap \varphi \langle \vee \theta T \psi \sqcap < \sqcap +, \\ \sqcap \delta \cap \# \int \sqcap \subset \theta T \psi \sqcap < \sqcap +, \theta T \& \sqcap \lrcorner \pm \sigma \mathfrak{T} | \sqcap \vee \vee \theta T \psi \sqcap, \varphi \langle \vee + | \leftarrow \lrcorner \leq \vee \theta \\ T \psi \sqcap < \sqcap +), \vee \theta T \psi \sqcap < \sqcap \oplus \leq \sqcap \& \sqcap T \quad \therefore \lrcorner \leq \sqcap \Delta'' \therefore T \quad \overline{\sigma \mathfrak{T} \lrcorner \pm} \therefore T.$$

$$3. \vee \theta T \psi \sqcap < \sqcap \delta \sqcap \varepsilon T \delta \sqcap \leftrightarrow \therefore T :$$

$$\vee \int \sqcap > \wp [\lrcorner \leq, \vee \int'' \chi \subseteq, \kappa \subseteq + \delta \sqcap \neg \sqcap \leftarrow \lrcorner \leq \delta \sqcap \varepsilon T \delta \sqcap \leftrightarrow \therefore T, | \sqcap] \chi \subseteq \\ \neg \sigma \mathfrak{T} \varepsilon \vee \sigma \sqcap Z \therefore T, \vee \theta T \psi \sqcap < \sqcap | | \sqcap \varphi \wr \vee \cup H \sqcap \therefore T.$$

$$4. \vee \sim \int \lrcorner \pm \sigma \mathfrak{T} \vee \int'' \omega \sqcap > \pm^{\text{TM}} \wr \therefore T > \bullet T :$$

$$\sigma \sqcap | \omega \sqcap \dots \beta \subseteq \therefore H \sqcap \varphi \langle T + |^{\text{TM}} \sqcap + > \bullet + \wr \varphi \cup] \angle \theta, \cup \sigma \mathfrak{T} T > \bullet T^{\text{TM}} \langle T \\ \theta \sqcap \lrcorner \leq \sqcap \omega \text{---}, \vee \sim \int \lrcorner \pm \sigma \mathfrak{T} \vee \int'' \omega \sqcap \varepsilon \Xi \rangle \leftrightarrow \lrcorner \leq^{\text{TM}} \langle, \vee \sim \int \lrcorner \pm \sigma \mathfrak{T} \vee \int'' \chi \subseteq$$

$$\begin{aligned}
& \delta \square + | \square \square T + \exists < \int \square T \therefore T, \varsigma \square " \oplus \leq \square \neg \therefore T, \upsilon " < \int \square \leftrightarrow^{\text{TM}} \langle \therefore T, {}^{\text{TM}} \lfloor \therefore T \rangle \bullet \\
& T \delta \square \exists \varepsilon \upsilon \int " \omega \square \oplus \leq \square < \wp \varsigma \square " < \square \therefore T \\
& \square < \int \square \sigma \mathfrak{I} | > \bullet + < \div \square \therefore T \\
1. \quad & \nu \theta T \psi \square < \square \delta \square \varepsilon T \delta \square \leftrightarrow \therefore T \quad - \\
& \sigma \square \# \langle \varepsilon T \therefore T' \sigma \square \varepsilon T \# \langle + | < \square \Re \sigma \& \square f \\
2. \quad & \nu \theta T \psi \square \delta \longrightarrow \square \emptyset + {}^{\text{TM}} \square \therefore T \quad - \\
& \& \square \backslash \backslash \mu \delta \tau. \nu \lrcorner | \neg \Re \sigma \& \square f \\
3. \quad & \nu \sim \int \lrcorner \pm \sigma \mathfrak{I} \upsilon \int " \omega \square > \pm {}^{\text{TM}} \lfloor \therefore T \rangle \bullet T \quad - \\
& \delta \longrightarrow. < \int \square \sigma \square \square \sigma \square E \\
4. \quad & \nu \theta T \psi \square < \square \beta \subseteq \sigma \otimes \square \therefore T \quad - \\
& \square \sqrt{< \square \sigma \square E \sigma \square < \int \square \lrcorner \leq \square \omega \square \square \\
5. \quad & \nu \theta T \varepsilon \sim + \# \langle \& \square + \mu \} " \quad - \quad > \wp \exists + < \square \sigma \square E \# \langle | \lrcorner \leq < \int \square \sigma \Psi
\end{aligned}$$

Psychology

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
SYLLABUS UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
FROM THE ACADEMIC YEAR: 2017-18
PROGRAMME: III B.A PSYCHOLOGY

SEMESTER-V

CODE:

MODULE(V-Advanced Core): CHILD & ADOLESCENT PSYCHOLOGY-I

HOURS: 3Hrs/week

CREDITS:3

MAX.MARKS:100(25+75)

UNIT I: NATURE OF HUMAN DEVELOPMENT

- A) Meaning and importance of Developmental psychology; Concept of growth and development, Principles of development. Stages of human life span; Methods of studying human development.
- B) Factors influencing growth and development: Heredity and environment.

UNIT II: EARLY STAGES OF DEVELOPMENT

- A) **Prenatal Period:** Characteristics. importance of conception. prenatal stages, factors influencing prenatal development - Hazards.
- B) **Infancy:** Characteristics of infancy, physical development, activities, capacity for learning, and emotions of infants - Hazards.

UNIT III: BABYHOOD

- A) Babyhood Characteristics, developmental tasks, physical development, physiological functioning and muscle control.
- B) Speech development - emotional behavior - play interests of infants. Hazards.

UNIT IV: EARLY CHILDHOOD - I

Early childhood General characteristics - developmental tasks- physical development, Skills of early childhood- speech development -

UNIT V: EARLY CHILDHOOD - II

Emotional patterns - Patterns of early socialization and sex- role typing - play interests - development of understanding and morality - family relationships - personality development - Hazards.

Reference Books:

1. Hurlock , E.B. 1980. Developmental psychology - A life span approach .Tata McGraw Hill, New delhi.
2. Papalia , D.E, Olds,S.W, Feldman.R.D, and Gross.D.(2010). Human Development. Tata M Graw Hill, New Delhi.

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
SYLLABUS UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
FROM THE ACADEMIC YEAR: 2017-18
PROGRAMME: III B.A PSYCHOLOGY

SEMESTER-V

CODE:

MODULE(VI-A Advanced Elective): ABNORMAL PSYCHOLOGY-I

HOURS: 3H

CREDITS: 3

MAX. MARKS: 100(25+75)

UNIT I: INTRODUCTION TO ABNORMAL PSYCHOLOGY

Defining abnormality, Criteria of abnormality, Approaches to psychopathology – Biological, Psychodynamic, Behavioural, Cognitive-behavioural, and Existential.

UNIT-II: CLASSIFICATION AND CAUSES OF ABNORMALITY

Classification of disorders, Etiological factors in abnormality-Biological, psychological and socio-cultural factors.

UNIT III: ANXIETY DISORDERS

Nature and Symptoms of anxiety disorder, types of anxiety disorders-general anxiety disorder, phobias, obsessive compulsive disorder, post traumatic stress disorder.

UNIT IV: SOMATOFORM DISORDERS

Symptoms of somatoform disorders, types of somatoform disorders-conversion disorders, pain disorders, hypochondrias

UNIT V: DISSOCIATIVE DISORDERS – NATURE AND SYMPTOMS

Amnesia and Fugue

Dissociative identity disorder

References:

1. Lamm, A. (1997). Introduction to psychopathology, N.Y.: Sage .
2. Sarason, I.G & Sarason, B.R. (2006). Abnormal psychology. Prentice-Hall of India. New Delhi.
3. Comer, R.J. (1996). Fundamentals of Abnormal psychology. W.H. Freeman and company, New York.

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
SYLLABUS UNDER CHOICE BASED CREDIT SYSTEM (CBCS)
FROM THE ACADEMIC YEAR: 2017-18
PROGRAMME: III B.A PSYCHOLOGY

SEMESTER-VI

CODE:

MODULE(VII Applied Core): CHILD&ADOLESCENCE PSYCHOLOGY-II

HOURS: 3H

CREDITS:3

MAX.MARKS:100(25+75)

UNIT I: LATE CHILDHOOD

Late childhood General characteristics, Developmental tasks, Skills of late childhood, Speech development, Emotional expression, Social behavior and Sex role typing in late childhood, Play interests, and Personality changes- Hazards

UNIT II: PUBERTY

Puberty General characteristics, Criteria, Causes and age of puberty, Puberty growth spurt, Body changes in puberty, Effects of pubertal changes, Deviant Maturing, Common concerns during puberty – Hazards.

UNIT III: ADOLESCENCE - I

Adolescence General characteristics – developmental tasks- physical changes – emotionality during adolescence - Social changes, Interests in adolescence

UNIT IV: ADOLESCENCE – II

Sex interest and sex behavior during adolescence, Changes in morality - Family relationships and Personality development - Hazards.

UNIT V: THEORIES OF HUMAN DEVELOPMENT

Gesell's Developmental theory; Freud's Psychosexual stages of development, Erikson's psychosocial stages of development, Piaget's Cognitive development, Kohlberg's theory of moral development.

Reference Books:

1. Hurlock , E.B. 1980. Developmental psychology – A life span approach .Tata McGraw Hill, New delhi.
2. Papalia , D.E, Olds,S.W, Feldman.R.D, and Gross.D.(2010). Human Development. Tata M Graw Hill, New Delhi.

KVR GOVT.COLLEGE FOR WOMEN, KURNOOL
3rd YEAR B.A PSYCHOLOGY PRACTICAL
(Effective from the Academic Year 2016)

Semester VI

Marks-50

SYLLABUS FOR CHILD & ADOLESCENT PSYCHOLOGY PRACTICUM (Compulsory)

Conduct any Four experiments from the following

- 1) Colour progressive matrices
- 2) Bem Sex Role Inventory
- 3) Study habits inventory
- 4) Alexander Passalong test
- 5) Emotional Intelligence Scale for Youth

SYLLABUS FOR ABNORMAL PSYCHOLOGY PRACTICUM (Optional)

Conduct any Four experiments from the following

- 1) Anxiety Inventory
- 2) I-E locus of control inventory
- 3) Aggression questionnaire
- 4) Adjustment Inventory
- 5) Depression questionnaire

SYLLABUS FOR EDUCATION PSYCHOLOGY PRACTICUM (Optional)

Conduct any Four experiments from the following

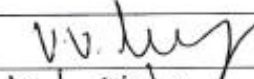
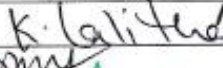
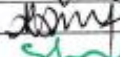
- 1) Interest schedule
- 2) Study skills Inventory
- 3) DAT
- 4) High school personality questionnaire
- 5) Teacher Aptitude test

PROJECT WORK(Compulsory)

Project work/ Field work/ Case Study (any one) minimum 10 pages is to be submitted from the following areas

1. Elementary school children	2. Adolescent problems	3. Orphan homes
4. Juvenile Homes	5. Home for Mentally Retarded	6. Old age Homes

Approved by:

1.	Sri V.Sesha Reddy	Chairperson	
2.	Dr.K.Lalitha	University Nominee	
3.	Dr.G.Koteswaraiah	Subject Expert	
4.	Dr. S.Shamsudden	Subject Expert	
5.	Smt. D.Krishnaveni	Member(Industry)	
6.	N.Parvathi	Alumnus	

Botany

K.V.R. Govt. COLLEGE FOR WOMEN {AUTONOMOUS}, KURNOOL

III B.Sc., SEMESTER: V

Paper: V – CELL BIOLOGY, GENETICS AND PLANT BREEDING

UNIT – I Cell Biology:

(12hrs)

1. Cell, the unit of life- Cell theory, Prokaryotic and eukaryotic cells; 2.Ultra structure and functions of cell wall and cell membranes.
3. Chromosomes: morphology, organization of DNA in a chromosome (nucleosome model), Euchromatin and heterochromatin.
4. Cell division: Mitosis and Meiosis

UNIT – II Genetic Material:

(12hrs)

1. DNA as the genetic material: Griffith's and Avery's transformation experiment, Hershey – Chase bacteriophage experiment.
2. DNA structure (Watson & Crick model) and replication of DNA (semi-conservative)
3. Types of RNA (mRNA, tRNA, rRNA), their structure and function.

UNIT – III Mendelian Inheritance:

(15 hrs)

1. Mendel's laws of Inheritance (Mono- and Di- hybrid crosses); backcross and test cross.
2. Chromosome theory of Inheritance.
3. Linkage: concept, complete and incomplete linkage, coupling and repulsion; linkage maps based on two factor crosses.
4. Crossing Over: concept & significance.

UNIT – IV Principles of Plant Breeding:

(12 hrs)

1. Introduction and Objectives of plant breeding.
2. Methods of crop improvement: Procedure, advantages and limitations of Introduction, Selection, and Hybridization (outlines only).
Role of mutations in crop improvement.

UNIT – V Breeding. Crop improvement:

(12 hrs)

1. Role of Mutations in Crop improvement.
2. Male sterility and self incompatibility.
3. Role of hybridization in crop improvement with particular reference to – Cotton, Chillies.
4. Ploidy breeding.

Suggested activity: Seminar, Debate, Quiz, observation of live cells and nucleus in Onion peels, observation of Meiotic nuclei in Maize pollen. Solving Genetics problems.

Books for Reference:

1. Old, R.W. and Primrose S.B. 1994, Principles of Gene Manipulation Blackwell Science, London
2. Grierson, D. and Convey S.N. 1989, Plant Molecular Biology, Blackie Publishers, New York.
2. Lea, P.J. and Leegood R.C. 1999, Plant Biochemistry and Molecular Biology, John Wiley and Sons, London.
3. Power C.B., 1984, Cell Biology, Himalaya Publishing Co. Mumbai
4. De. Robertis and De Robertis, 1998, Cell and Moleceular Biology, K.M. Verghese and Company.
5. Sinnott, E.W., L.C. Dunn & J. Dobshansky (1958) : Principles of Genetics (5th Edition McGraw Hill Publishing Co., N.Y. Toronto, London.
6. Winchester, A.M. (1958) : Genetics(3rd Edition) Oxford & IBH Publishing House, Calcutta, Bombay, New Delhi.
7. Singleton, R.(1963) : Elementary Genetics, D. Van Nostrand Co., Ltd., Inc., N.Y. & Affiliated East West Press (P) Ltd., New Delhi.
8. Strickberger, M.W. (1976): Genetics(2nd Edition) MacMillan Co., Inc., N.Y., London
9. Watson, J.D. (1977): Molecular Biology of the Gene, W.A. Benjamin, Inc., Menlo Park- California, Reading-Massachusetts, London, Amsterdam, Don Mills, Ontario, Sydney.
10. Gardner, E.J & Snusted, D.P.(1984): Principles of Genetics (7th edition) John Wiley & Sons, N.Y. Chichester, Brisbane, Toronto, Singapore.
11. Lewin, B. (1985) Genes VII Wiley Eastern Ltd., New Delhi, Bombay **Calcutta**, Madras, Hyderabad.
12. Allard R.W (1999): The Principles of Plant Breeding, John & Wiley and Sons.
13. Poelman J.M: Breeding Field Crops, Springer.
14. George Acquaah(2012):Principles of Plant Genetics & Breeding: Wiley-Blackwell.

Paper: VI – EMBRYOLOGY, PLANT ECOLOGY, PHYTOGEOGRAPHY & PLANT BIODIVERSITY

UNIT – I. EMBRYOLOGY

(12 hrs)

1. Anther – Microsporogenesis
2. Ovule – Megasporogenesis
Tetrasporic embryo sac – Peperomea, Drusa, Adoxa
3. Endosperm development
4. Embryo development

UNIT – II. Elements of Ecology

(12 hrs)

1. Ecology: definition, branches and significance of ecology.
2. Climatic Factors: Light, Temperature, precipitation.
3. Edaphic Factor: Origin, formation, composition and soil profile.
4. Biotic Factor: Interactions between plants and animals.

UNIT– III. Ecosystem Ecology

(12 hrs)

1. Ecosystem: Concept and components, energy flow, Food chain, Food web, Ecological pyramids.
2. Productivity of ecosystem-Primary, Secondary and Net productivity.
3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.

UNIT – IV Population & Community Ecology

(12 hrs)

1. Population -definition, characteristics and importance, outlines –ecotypes.
2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Growth curves competition.
3. Interaction between plants growing in a community.

UNIT – V Phytogeography & Plant Biodiversity

(12 hrs)

1. Principles of Phytogeography, Distribution (wides, endemic, discontinuous species)
2. Phytogeographic regions of India.
3. Endemism – types and causes
4. Definition, levels of biodiversity-genetic, species and ecosystem.
5. Biodiversity hotspots- Criteria, Biodiversity hotspots of India.
6. Conservation of biodiversity (In-situ and ex-situ methods). Germplasm

Suggested activity : Collection of different soils, studying their texture, observing polluted water bodies, student study projects, debates on man's activity on ecosystem and biodiversity conservation methods, visiting a nearest natural vegetation area. Visit to NGO, working in the field of biodiversity and report writing; to study Honey Bees and plants yielding honey.

Books for Reference:

1. Daubenmire, R.F. (): Plants & Environment (2nd Edn.,) John Wiley & Sons., New York

2. Puri, .G.S. (1960): Indian Forest Ecology (Vol.I & II) Oxford Book Co., New Delhi & Calcutta.
3. Billings, W.B. (1965): Plants and the Ecosystem Wadsworth Publishing Co., Inc., Belmont.
4. Misra, R. (1968): The Ecology work Book Oxford & INH Publishing Co., Calcutta
5. Odum E.P. (1971): Fundamentals of Ecology (2nd Edn.,) Saunders & Co., Philadelphia & Natraj Publishers, Dehradun.
6. Odum E.P. (1975): Ecology By Holt, Rinert & Winston.
7. Oosting, H.G. (1978): Plants and Ecosystem Wadworth Belmont.
8. Kochhar, P.L. (1975): Plant Ecology. (9th Edn.,) New Delhi, Bombay, Calcutta-226pp.,
9. Kumar, H.D. (1992): Modern Concepts of Ecology (7th Edn.,) Vikas Publishing Co., New Delhi.
10. Kumar H.D. (2000): Biodiversity & Sustainable Conservation Oxford & IBH Publishing Co Ltd. New Delhi.
11. Newman, E.I. (2000): Applied Ecology Blackwell Scientific Publisher, U.K.
12. Chapman, J.L&M.J. Reiss (1992): ecology (Principles & Applications). Cambridge University Press, U.K.
13. Cain, S.A . (1944): Foundations of Plant Geography Harper & Brothers, N.Y.
14. Mani, M.S (1974): Ecology & Biogeography of India Dr. W. Junk Publishers, The Haque
15. Good, R. (1997): The Geography of flowering Plants (2nd Edn.) Longmans, Green & Co., Inc., London & Allied Science Publishers, New Delhi

K.V.R. Govt. COLLEGE FOR WOMEN {AUTONOMOUS},KURNOOL
III B.Sc., SEMESTER – VI

ELECTIVE PAPER – VII:PLANT TISSUE CULTURE AND BIOTECHNOLOGY

Unit I: PLANT TISSUE CULTURE – 1 **(12hrs)**

1. History of plant tissue culture research - basic principles of plant tissue callus culture, meristem culture, organ culture, Totipotency of cells, differentiation and dedifferentiation.
2. Methodology - sterilization (physical and chemical methods), culture media, Murashige and Skoog's (MS medium), phytohormones, medium for micro-propagation/clonal propagation of ornamental and horticulturally important plants.
3. Callus subculture maintenance, growth measurements, morphogenesis in callus culture – organogenesis, somatic embryogenesis.

UNIT-II: Plant Tissue culture -2 **(12hrs)**

1. Endosperm culture – Embryo culture -culture requirements – applications, embryo rescue technique.
2. Production of secondary metabolites & Synthetic seeds.
3. Cryopreservation; Germ plasm conservation.

Unit III: Recombinant DNA technology **(12hrs)**

1. History and scope of r-DNA technology
Type II RES, DNA ligase DNA polymerases, DNA , Topoisomerases DNA modifying enzymes.
2. Cloning Vectors: Natural Plasmids, Salient features ,Prokaryotic (PBR322,Ti plasmid and Lambda phage, BACS Eukaryotic Vectors (YAC)
3. Principles of Gene cloning (Bacterial Transformation and selection of recombinant clones, PCR)
4. Gene Libraries : Genomic and c DNA libraries, construction & screening, methods to obtain gene of interest and colony hybridization

Unit IV: Methods of gene transfer **(12hrs)**

1. Physical methods - direct gene transfer – elctroporation , gene gun, Microproject bombardment , vector mediated gene transfer.(Agro bacterium mediated).
2. Selection of Transgenics– selectable marker and reporter genes (Luciferase, GUS,).

Unit V: Applications of Biotechnology **(12 hrs)**

1. Applications of Plant Genetic Engineering – crop improvement,herbicide resistance, insect resistance, virus resistance.
2. Transgenic plants for pest resistant (Bt-cotton); herbicide resistance (Round Up Ready soybean); improved agronomic traits - flavrSavr tomato, Golden rice); Improved horticultural varieties (Moon dust carnations)

Books for Reference:

1. Pullaiah. T. and M.V.Subba Rao. 2009. Plant Tissue culture. Scientific Publishers, New Delhi.
2. Bhojwani, S.S. and Razdan, M.K., (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Amsterdam. The Netherlands.
3. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.
4. Bhojwani, S.S. and Bhatnagar, S.P. (2011). The Embryology of Angiosperms. Vikas Publication House Pvt. Ltd., New Delhi. 5th edition.
5. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics. John Wiley and Sons, U.K. 5th edition.
6. Stewart, C.N. Jr. (2008). Plant Biotechnology & Genetics: Principles Techniques and Applications. John Wiley & Sons Inc. U.S.A.
7. Gene cloning by T.A.Brown
8. Biotechnology by U.Satyanarayana

Suggested Activities: In vitro initiation of callus on artificial medium, seminars on utilization of rDNA technology, debates on applications of Biotechnology (whether it is a boon or bane to the society) studying growth patterns, vegetative characteristics of Bt.cotton and identifying the features of its pest resistance

III B.Sc., SEMESTER – VI

CLUSTER ELECTIVE: PAPER – VIII- A: PLANT DIVERSITY AND HUMAN WELFARE

Unit- I: Plant diversity and its scope: (12hrs)

- i. Genetic diversity, Species diversity, Plant diversity at the ecosystem level, Agro biodiversity and cultivated and wild plants
- ii. Values and potentialities of biodiversity: Ethical and aesthetic values, and Methodologies for valuation,
- iii. Ecological, habit and geographical relations

Unit -II: Loss of biodiversity: (12hrs)

- i. Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss
- ii. Management of plant biodiversity: Organizations associated with biodiversity management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR;
- iii. Biodiversity legislation and conservations, Biodiversity information management and communication.

Unit-III: Contemporary practices in resource management: (12hrs)

- i. Environmental Impact Assessment (EIA): purpose and benefits, EIA process, areas of human concern (impact categories)
- ii. Geographical Information System GIS,
- iii. Brief account on Participatory resource appraisal, carbon footprint, Resource accounting;
- iv. Solid and liquid waste management: Types, Environmental and health impact, waste management

Unit -IV: Conservation of biodiversity (12hrs)

- i. Conservation of Biodiversity: Types, In situ and ex situ conservation,
- ii. Biosphere reserves, Endemism, Red data book, RET species, Sacred grooves
- iii. Social approaches to conservation, Biodiversity awareness programmes, Sustainable development.

Unit- V: Role of plants in relation to Human Welfare (12hrs)

- i. Importance potentialities of forests with reference to Andhra Pradesh state: Wood, fiber, gums and resins.
- ii. Aromatic plants and Food yielding plants- millets, spices and condiments
- iii. Microbes in human welfare: Household products, Industrial products, Biofertilizers

Suggested Readings:

1. Krishnamurthy, K.V. (2004). An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi.
2. Singh, J. S., Singh, S.P. and Gupta, S. (2006). Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.

3. Rogers, P.P., Jalal, K.F. and Boyd, J.A. (2008). An Introduction to Sustainable Development. Prentice Hall of India Private Limited, New Delhi.

Suggested activities: Study of flora and its diversity in the college campus or local area, enumerating wild and exotic species (Parthenium, Water hyacinth etc.)

Project work on any one of the International organizations striving for preservation of biodiversity, study of conservation efforts of local people, and civic bodies, study of locally available fruits in different seasons, enumerating the avenue plantations and their diversity in your town/city

CLUSTER ELECTIVE: PAPER – VIII-B: ETHANOBOTANY AND MEDICINAL BOTANY

Unit –I: Ethanobotany (12hrs)

- i. Introduction, concept, scope and objectives; Ethno botany as an Interdisciplinary science. The relevance of ethanobotany in the present context
- ii. Major and minor ethnic groups of Tribals in India, and their dependence on their surrounding plant resources
- iii. Plants used by the tribal populations: a) Food plants, b) Intoxicants and beverages, c) Gums, Resins and oils.

Unit -II: Role of ethnobotany in modern Medicine: (12hrs)

- i. Role of ethnobotany in modern medicine with special reference to Rauvolfia serpentina, Trichopus zeylanicus, Artemisia annua, Withania somnifera.
- ii. Medico-ethnobotanical sources in India
- iii. Significance of the following plants in ethnobotanical practices (with their habitat and morphology) :a) Azadirachta indica, b) sanctum, c) Vitex negundo, d) Gloriosa superba, e) Tribulus terrestris f) Phyllanthus amarus , g) Cassia auriculata, h) Indigofera tinctoria , i) Senna auriculata j). Curcuma longa.

Unit-III: Ethnobotany as a tool to protect interests of ethnic groups (12hrs)

- i. Sharing of wealth concept with reference to medicinal plants Arogyapaccha, Memoryplus and Taxol
- ii. Biopiracy, Intellectual Property Rights and Traditional Botanical (TBK) Knowledge.
- iii. Role of ethnic groups in the conservation of plant genetic resources

Unit -IV: History, Scope and Importance of Medicinal Plants. indigenous Medicinal Sciences (12hrs)

- i. Definition and Scope-AYUSH; **Ayurveda**: History, origin development panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments.
- ii. **Siddha**: Origin of Siddha system, Basis of Siddha system, plants in Siddha medicine.
- iii. Unani: History, concept: Umoor-e- tabiya, tumors treatments and therapy, polyherbal formulations (in brief).

Unit -V: Conservation of endangered and endemic medicinal plants: (12hrs)

- i. Definition: Aims and objectives of conservation; Rare, endemic and endangered medicinal plants,
- ii. Red list criteria
- iii. In situ conservation: sacred groves, National Parks
- iv. Ex situ conservation: Botanical Gardens.

Suggested Activities: Studying plant utilization methods by tribal/rural/migrant populations for their beverages, food, medicinal and uses, seminars on role of ethnic groups in conservation of plant genetic resources, project work on traditional knowledge about plant medicines, study of indigenous medicinal sciences and their efficacy.

Suggested Readings:

- 1) S.K. Jain, Manual of Ethnobotany, Scientific Publishers, Jodhpur, 1995.
- 2) Glimpses of Indian. Ethnobotny, Oxford and I B H, New Delhi – 1981.
- 3) S.K. Jain (ed.) 1989. Methods and approaches in ethnobotany. Society of ethnobotanists, Lucknow, India.
- 4) S.K. Jain, 1990. Contributions of Indian ethnobotny. Scientific publishers, Jodhpur.
- 5) Colton C.M. 1997. Ethnobotany – Principles and applications. John Wiley and sons – Chichester
- 6) Rama Ro, N and A.N. Henry (1996). The Ethnobotany of Eastern Ghats in Andhra Pradesh, India. Botanical Survey of India. Howrah.
7. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.
8. Purohit and Vyas, 2008. Medicinal Plant Cultivation: A Scientific Approach, 2nd edn. Agrobios, India.
- 9 Pal, D.C. & Jain, S.K., 1998. Tribal Medicine. Naya Prakash Publishers, Calcutta
10. Raychudhuri, S.P., 1991. (Ed.) Recent advances in Medicinal aromatic and spice crops.

**CLUSTER ELECTIVE: PAPER – VIII-C: PHARMACOGNOSY AND
PHYTOCHEMISTRY**

Unit-I: Pharmacognosy (12hrs)

- i. Definition, Importance, Chemical, Morphological and pharmacological classification of drugs
- ii. Drug evaluation methods: Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of *Alstonia scholaris* (bark), *Adhatoda vasica* (leaf), *Strychnos nuxvomica* (seed), *Rauwolfia serpentina* (root) and *Zinziber officinalis*, *Catharanthus roseus*.

Unit-II: Secondary Metabolites: (12hrs)

- i. Definition, Differences between primary secondary and metabolites, major types - terpenes, phenolics, alkaloids, terpenoids, steroids.
- ii. Principles of extraction with reference to Alkaloids. Origin secondary metabolites – detailed account of acetate pathway, mevalonate pathway, shikimate pathway.

UNIT-IV: Phytochemicals in Medicine: Natural Plant Phenols (12hrs)

- i. Simple Phenols and Phenolic compounds: chemistry and distribution, Benzoic acid derivatives and Cinnamic acid derivatives, isolation techniques in brief
- ii. Chemistry, distribution and chemical tests for Tannins, Quinones, Flavonoids
- iii. Chemistry and distribution of Anthocyanins and Anthocyanadin; Xanthone and stilbenes
- iv. Phenols in human health

UNIT-IV: Phytochemicals in Medicine: Biosynthesis and sources of drugs: (12hrs)

- i Steroids, sterols, saponins, withanolides, ecdysones, cucurbitacins: Biosynthesis, commercial importance.
- ii Alkaloids: Different groups, biosynthesis and bioactivity.
- iii. Volatile oils.

UNIT-V: Enzymes, proteins and amino acids as drugs: (12 hrs)

- i. Vaccines, toxins and toxoids, antitoxins, immune globulins, antiserums,
- ii. Antibiotics – chemical nature, mode of action: Penicillin, treptomycin, Erythromycin Pharmacological action of plant drugs – tumor inhibitors, PAF antagonists, antioxidants, phytoestrogens and others.

Suggested Activities: Isolation techniques of active principles from various parts of popular medicinal plants, debates on the efficacy of plant medicines and palliative cure, volatile oils from plants-extraction methods, project work on crude drugs

BOOKS FOR REFERENCE:

1. Wallis, T. E. 1946. Text book of Pharmacognosy, J & A Churchill Ltd.
2. Roseline, A. 2011. Pharmacognosy. MJP Publishers, Chennai.
3. Gurdeep Chatwal, 1980. Organic chemistry of natural productis.
4. Vol.I.Himalaya Publishing house.
5. Kalsi, P. S. and Jagtap, S., 2012. Pharmaceutical medicinal and natural product chemistry
6. N.K. Mehra . Narosa Publishing House Pvt. Ltd. New Delhi.
7. Agarwal, O. P. 2002. Organic chemistry–Chemistry of organic natural
a. Products. Vol. II. Goel publishing house, Meerut.
8. Harborne, J. B. 1998. Phytochemical methods –a guide to modern techniques of plant analysis 3 rd edition, Chapman and Hall
9. Datta & Mukerji, 1952. Pharmacognosy of Indian roots of Rhizome drugs. Bulletin No.1 Ministry of Health, Govt. of India.

III B.Sc., SEMESTER: V
Paper: V – CELL BIOLOGY, GENETICS AND PLANT BREEDING
Practical List

1. Study of the structure of cell organelles
2. Study of structure of plant cell
3. Study of DNA packing
4. Effect of temperature and organic solvent on permeability of cell membrane
5. Numerical problems solving Mendel's loss of inheritance
6. Hybridization techniques
7. Colorimetric estimation of DNA by Diphenylamine method.

III B.Sc., SEMESTER: V

**Paper: VI – EMBRYOLOGY, PLANT ECOLOGY, PHYTOGEOGRAPHY & PLANT
BIODIVERSITY**
Practical List

1. Study of instruments used to measure Microclimatic variables – Soil thermometer ,
Maximum
thermometer, Anemometer , Psychrometer, Rain Gauge, Luxmeter
2. Permeability of different soil samples
3. Determination of soil pH
4. Study Morphological and Anatomical adaptations of Hydrophytes and Xerophytes
5. Determination of minimal quadrat size for the study of Herbaceous vegetation in the
college campus by species area curve method
6. Study of Phytoplankton and Macrophytes from water bodies
7. Study of species diversity index vegetation
8. Study of plants included in Agro forestry and social forestry
9. Endemic plants of India
10. Estimation of primary productivity of an Ecosystem

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ELECTIVE PAPER – VII:PLANT TISSUE CULTURE AND BIOTECHNOLOGY

Practical List

- 1.Preparation of MS medium
- 2.Demonstration of Invitro sterilization methods and inoculation methods by using Leafexplants of tobacco, Datura, Brassica
- 3.Study of methods of Gene transfer through photographs
- 4.Different steps involved in Genetic engineering for production of Bt cotton and golden rice, flavr savr tomato through photographs
5. Isolation of plasmid DNA
6. Restriction digestion and gel electrophoresis of plasmid DNA
7. Field visit to a Lab involved in Tissue culture
- 8.Study project under supervision of Lecturer – Tissue culture / Genetic engineering

III B.Sc., SEMESTER – VI

CLUSTER ELECTIVE: PAPER – VIII- A: PLANT DIVERSITY AND HUMAN WELFARE

Practical List

- 1.Study of plant diversity (flowering plants)
- 2.Study of exotic specious identification and Morphological characterstics
- 3.Identification forest trees through bark, wood, flowers, leafs and fruits
4. Maceration , study of wood
- 5.Methods of preservation and canning of fruits
6. Visit to the local Ecosystem to study the plants
7. Wtite up on the conservation efforts of International Organizations
8. Study of solid and liquid waste management systems in rural/urban areas.

III B.Sc., SEMESTER – VI

CLUSTER ELECTIVE: PAPER – VIII-B: ETHANOBOTANY AND MEDICINAL BOTANY

Practical List

1. *Rauvolfia serpentina*, *Trichopus zeylanicus*, *Artemisia Annua*, *Withania* plants which are used as Ethanobotanical specimens
2. *Azadirachta indica*, *Ocimum sanctum*, *Vitex negundo*, *Phyllanthus amarus*, *Cassia auriculata*, Morphological medicinal importance of these plants
3. Field visits to identify and collect ethanomedicinal plants used by local tribes

III B.Sc., SEMESTER – VI

CLUSTER ELECTIVE: PAPER – VIII-C: PHARMACOGNOSY AND PHYTOCHEMISTRY

Practical List

1. Physical and chemical tests for evaluation of unorganized drugs – Asaphoetida, Honey, Castor oil ,
Acacia
2. Identification of bark drugs – Cinchona, Cinnamon
3. Identification of fruit drugs – Cardamom, Coriander
4. Identification of Root and Rhizome drugs – Ginger , Garlic, Turmeric
5. Identification of whole plant – Aloe, Vinca, Punarnava
6. Herbarium of 20 medicinal plants
7. Collection of 20 locally available crude drugs from local vendors

Zoology

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

(w. e. f. 2017-2018)

DEPARTMENT OF ZOOLOGY

ZOOLOGY SYLLABUS FOR V SEMESTER

ZOOLOGY - PAPER - V

ANIMAL BIOTECHNOLOGY

Unit 1: Tools of Recombinant DNA technology - Enzymes and Vectors

Restriction modification systems: Types I, II and III. Mode of action, nomenclature, applications of Type II restriction enzymes in genetic engineering.

Cloning: Use of linkers and adaptors

DNA modifying enzymes and their applications: DNA polymerase,. Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases

Cloning Vectors: Plasmid vectors:pBR and pUC series, Bacteriophage lambda, Cosmids.

Unit 2 Techniques of Recombinant DNA technology

Gene delivery: Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated delivery

PCR: Basics of PCR.

DNA Sequencing: Sanger's method.

Hybridization techniques: Southern, Northern and Western blotting,

Genomic libraries: cDNA synthesis .

UNIT 3 Animal Cell Technology

Cell culture media: Natural and Synthetic

Cell cultures: primary culture, secondary culture, continuous cell lines; Established Cell lines (common examples such as,HeLa, CHO,); Organ culture; Cryopreservation of cultures.

Hybridoma Technology: Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb

Stem cells: Types of stem cells, applications

Unit 4 Reproductive Technologies & Transgenic Animals

Manipulation of reproduction in animals: Artificial Insemination, In vitro fertilization , super ovulation, Embryo transfer, Embryo cloning

Transgenic Animals: Transgenic - sheep, fish; applications

Unit 5 Applied Biotechnology

Industry: Fermentation: Different types of Fermentation: Short notes on - Submerged & Solid state; batch, Fed batch & Continuous; Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization.

DNA fingerprinting.

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ZOOLOGY SYLLABUS FOR V SEMESTER

ZOOLOGY - PAPER - VI

ANIMAL HUSBANDRY

Periods:60

Max. Marks: 100

UNIT – I : 10 Hours

General introduction to poultry farming. Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers and layers. Management of Broilers.

UNIT – II: 10 Hours

Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.

UNIT – III: 10 Hours

Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks.

UNIT- IV: 20 Hours

Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system. Conventional dairy barn. Cleaning and sanitation of dairy farm. Weaning of calf. Castration and dehorning. Deworming and Vaccination programme. Records to be maintained in a dairy farm.

UNIT - V: 10 Hours

Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry

FOR V SEMESTER
ZOOLOGY –PRACTICAL - VI

ANIMAL HUSBANDRY
PRACTICALS SCHEME OF VALUATION

Zoology practical Examianation

Model Paper

Time :3 hours

Max .Marks: 50

I) Identification of breeds of layers and broilers ,breeds of cattle (photographs/microfilms)	20 marks
II) Identification of disease causing organisms in poultry birds/ the anatomy of a poultry bird	10 marks
III) submission of a report on various activities in a poultry farm, dairy farm.	5 X 2:10marks.
IV) Certified Record	10 Marks

Total Marks 50

KVR GOVT COLLEGE(W), KURNOOL
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ZOOLOGY SYLLABUS FOR CLUSTER ELECTIVE –VIII-B:
VI SEMESTER
AQUACULTURE

Cluster Elective Paper: VIII-B-1
PRINCIPLES OF AQUACULTURE

Periods:60

Max.Marks:100

Unit – I

1.1 Introduction / Basics of Aquaculture

- 1.1.1 Definition, Significance and History of Aquaculture
- 1.1.2 Present status of Aquaculture – Global and National scenario
- 1.1.3 Major cultivable species for aquaculture: freshwater, brackish water and marine.
- 1.1.4 Criteria for the selection of species for culture

Unit – II

2.1 Types of Aquaculture

- 2.1.1 Freshwater, Brackish water and Marine
- 2.1.2 Concept of Monoculture, Polyculture, Composite culture, Monosex culture and Integrated fish farming

2.2 Culture systems

- 2.2.1 cages, pens, Raceways, and water recirculating systems

2.3 Culture practices

- 2.3.1 Traditional, extensive, intensive, cultures of fish.

Unit – III

3.1 Design and construction of aquafarms

- 3.1.1 Criteria for the selection of site for freshwater pond farms
- 3.1.2 Design and construction of fish farms

3.2 Seed resources

- 3.2.1 Natural seed resources and Procurement of seed for stocking: Carp

3.3 Nutrition and feeds

- 3.3.1 Nutritional requirements of a cultivable fish
- 3.3.2 Natural food and Artificial feeds and their importance in fish culture

Unit – IV

4.1 Management of carp culture ponds

- 4.1.1 Culture of Indian major carps: Pre-stocking management – Dewatering, drying, ploughing/desilting; Predators, weeds and algal blooms and their control, Liming and fertilization; Stocking management – Stocking density and stocking; Post-stocking management – Feeding, water quality, growth and health care; and Harvesting of ponds

Unit – V

5.1 Culture of shrimp (*Penaeus monodon*)

5.2 Culture of pearl oysters

5.3 Culture of ornamental fishes – Setting up and maintenance of aquarium; and breeding.

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(Autonomous)
NAAC RE- ACCREDITED 'A' GRADE
Cluster Elective Paper: VIII-B-2
AQUACULTURE MANAGEMENT

Periods : 60

Max.Marks : 100

Unit – I

1.1 Breeding and Hatchery Management

- 1.1.1 Bundh Breeding of carp
- 1.1.2 Induced breeding of carp by Hypophysation;
- 1.1.3 Use of synthetic hormones
- 1.1.4 Types of fish hatcheries; Hatchery management of Indian major carps

Unit – II

2.1 Water quality Management

- 2.1.1 Water quality and soil characteristics suitable for fish culture
- 2.1.2 Identification of oxygen depletion problems and control mechanisms in culture ponds
- 2.1.3 Aeration: Principles of aeration and Emergency aeration
- 2.1.4 Liming materials, Organic manures and Inorganic fertilizers commonly used and their implications in fish ponds

Unit – III

3.1 Feed Management

- 3.1.2 Supplementary feeds: Principal foods in artificial diets; Types of feeds; role of probiotics.
- 3.1.3 Feed formulation and manufacturing; Feed storage
- 3.1.4 Feeding strategies: Feeding devices, feeding schedules and ration size; Feed evaluation- feed conversion efficiencies and ratios

Unit – IV

4.1 Disease Management

- 4.1.1 Principles of disease diagnosis and health management;
- 4.1.2 Prophylaxis, Hygiene and Therapy of fish diseases
- 4.1.3 Fish immunization and vaccination
- 4.1.4 Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds

Unit – V

5.1 Economics and Marketing

- 5.1.1 Principles of aquaculture economics – Capital costs, variable costs, cost-benefit analysis
- 5.1.2 Fish marketing methods in India; Basic concepts in demand and price analysis

5.2 Fisheries Extension

- 5.1.3 Fisheries Training and Education in India; Role of extension in community development.

REFERENCE BOOKS

1. Boyd CE. 1979. Water Quality in Warm Water Fish Ponds. Auburn University
2. Boyd, CE. 1982. Water Quality Management for Pond Fish Culture. Elsevier Sci. Publ. Co.
3. Chakraborty C & Sadhu AK. 2000. Biology Hatchery and Culture Technology of Tiger Prawn and Giant Freshwater Prawn. Daya Publ. House
4. Conroy CA and Herman RL. 1968. Text book of Fish Diseases. TFH (Great Britain) Ltd, England.
5. Halver J & Hardy RW. 2002. Fish Nutrition. Academic Press.
6. Ian C. 1984. Marketing in Fisheries and Aquaculture. Fishing News Books.
7. ICAR. 2006. Handbook of Fisheries and Aquaculture. ICAR.
8. Jhingran VG. 2007. Fish and Fisheries of India. Hindustan Publishing Corporation, India.
9. Jhingran VG & Pullin RSV. 1985. Hatchery Manual for the Common, Chinese and Indian Major Carps. ICLARM, Philippines.
10. Kumar D. 1996. Aquaculture Extension Services Review: India. FAO Fisheries Circular No. 906, Rome.
11. Lavens P & Sorgeloos P. 1996. Manual on the Production and Use of Live Food for Aquaculture. FAO Fisheries Tech. Paper 361, FAO.
12. MPEDA. 1993. Handbook on Aqua Farming - Live Feed. Micro Algal Culture. MPEDA Publication
13. New MB. 1987. Feed and Feeding of Fish and Shrimp. A Manual on the Preparation and Preservation of Compound Feeds for Shrimp and Fish in Aquaculture. FAO – ADCP/REP/87/26
14. Pandian TJ, Strüssmann CA & Marian MP. 2005. Fish Genetics and Aquaculture Biotechnology. Science Publ.
15. Pilley, TVR & Dill, WMA. 1979. Advances in Aquaculture. Fishing News Books, Ltd. England.
16. Pillay TVR & Kutty MN. 2005. Aquaculture- Principles and Practices. Blackwell.
17. Ray GL. 2006. Extension, Communication and Management. 6th Ed. Kalyani Publ. Delhi.
18. Reddy PV GK, Ayyappan S, Thampy DM & Gopalakrishna 2005. Text Book of Fish Genetics and Biotechnol. ICAR
19. Reichenbach KH. 1965. Fish Pathology. TFH (Gt. Britain) Ltd, England.
20. Shang YC. 1990. Aquaculture Economic Analysis - An Introduction. World Aquaculture Society, USA.
21. Singh B. 2006. Marine Biotechnology and Aquaculture Development. Daya Publ. House
22. Stickney RR. 1979. Principles of Warm water Aquaculture. John-Wiley & sons Inc.
23. Swain P, Sahoo PK & Ayyappan S. 2005. Fish and Shellfish Immunology: An Introduction. Narendra Publ.
24. Thomas PC, Rath SC & Mohapatra KD. 2003. Breeding and Seed Production of Finfish and Shellfish. Daya Publ.

KVR GOVT COLLEGE(W), KURNOOL
(Autonomous)
NAAC RE- ACCREDITED 'A' GRADE
Cluster Elective Paper: VIII-B-3
POST HARVEST TECHNOLOGY

Periods : 60

Max.Marks : 100

Unit – I

1.1 Handling and Principles of fish Preservation

- 1.1.1 Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage), spoilage in marine fish and freshwater fish.
- 1.1.2 Principles of preservation– cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays.

Unit – II

2.1 Methods of fish Preservation

- 2.1.1 Traditional methods - sun drying, salt curing, pickling and smoking.
- 2.1.2 Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).

Unit – III

3.1 Processing and preservation of fish and fish by-products

- 3.1.1 Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish cake, fish sauce, fish salads, fish powder, pet food from trash fish, fish manure.
- 3.1.2 Fish by-products – fish glue, ising glass, pearl essence, shark fins, fish leather and fish maws.

3.2 Seaweed Products

- 3.2.1 Preparation of agar, algin and carrageen. Use of seaweeds as food for human consumption, disease treatment and preparation of therapeutic drugs.

Unit – IV

4.1 Sanitation and Quality control

- 4.2.1 Sanitation in processing plants - Environmental hygiene and Personal hygiene in processing plants.
- 4.2.2 Quality Control of fish and fishery products – pre-processing control, control during processing and control after processing.

4.2 Regulatory affairs in industries

Unit – V

5.1 Quality Assurance, Management and Certification

- 5.1.1 Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety.
- 5.1.2 National and International standards – ISO 9000: 2000 Series of Quality Assurance System, Codex Alimentarius

REFERENCE BOOKS

1. Balachandran KK. 2001. Post-harvest Technology of Fish and Fish Products. Daya Publ.
2. Bond, et al. 1971. Fish Inspection and Quality Control. Fishing News Books, England.
- 3 Clucas IJ. 1981. Fish Handling, Preservation and Processing in the Tropics. Parts I, II. FAO.
4. Gopakumar K. (Ed.). 2002. Text Book of Fish Processing Technology. ICAR.
5. Govindan, TK.1985. Fish Processing Technology, Oxford-IBH.
6. Hall GM. (Ed). 1992. Fish Processing Technology. Blackie.
7. Huss HH, Jakobsen M & Liston J. 1991. Quality Assurance in the Fish Industry. Elsevier.
8. John DEV. 1985. Food Safety and Toxicity. CRC Press.
9. Krenzer R. 1971. Fish Inspection and Quality Control. Fishing News.
10. Larousse J & Brown BE. 1997. Food Canning Technology. Wiley VCH.
11. Nambudiri DD. 2006. Technology of Fishery Products. Fishing Chimes.
12. Regenssein JM & Regenssein CE.1991. Introduction to Fish Technology. VanNostrand Reinhold.
13. Rudolf K. 1969. Freezing and Irradiation of Fish. Fishing News (Books).
14. Sen DP. 2005. Advances in Fish Processing Technology. Alli

KVR GOVT COLLEGE(W), KURNOOL
(Autonomous)
NAAC RE- ACCREDITED 'A' GRADE
ZOOLOGY PRACTICAL SYLLABUS CLUSTER ELECTIVE PAPER: VIII-B
VI SEMESTER
AQUACULTURE

PRACTICAL: I

Periods : 24

Max.Marks : 50

Cultivable fishes

1. Identification and study of important cultivable and edible fishes - Any ten
2. Identification and study of important cultivable and edible crustaceans - Any five
3. Identification and study of common aquarium fishes – Any five
4. General description and recording biometric data of a given fish.

Diseases

1. Identification and study of fish and shrimp diseases - Using specimens / pictures
2. External examination of the diseased fish – diagnostic features and procedure.
3. Autopsy of fish – Examination of the internal organs.
4. Determination of dosages of chemicals and drugs for treating common diseases.

Pond Management

1. Water Quality -Determination of temperature, pH, salinity in the pond water sample;
Estimation of dissolved oxygen, free carbon dioxide, total alkalinity, total hardness, phosphates and nitrites.
2. Soil analysis – Determination of soil texture, pH, conductivity, available nitrogen, available phosphorus and organic carbon.
4. Identification and study of common zooplankton, aquatic insects and aquatic weeds-
Each 5

KVR GOVT COLLEGE(W), KURNOOL
(Autonomous)
NAAC RE- ACCREDITED 'A' GRADE
ZOOLOGY PRACTICAL SYLLABUS CLUSTER ELECTIVE PAPER: VIII-B
VI SEMESTER
AQUACULTURE
PRACTICAL - II

Periods :24

Max.Marks : 50

Nutrition

1. Identification and study of Live food organisms – Any five
2. Formulation and preparation of a balanced fish feed
3. Estimation of Proximate composition of aquaculture feeds – Proteins, carbohydrates, lipids, moisture, ash content.
4. Gut content analysis to study artificial and natural food intake.

Post harvest Technology

1. Evaluation of fish/ fishery products for organoleptic, chemical and microbial quality.
2. Preparation of dried, cured and fermented fish products, examination of salt, protein, moisture in dried / cured products, examination of spoilage of dried / cured fish products, marinades, pickles, sauce.
3. Preparation of isinglass, collagen and chitosan from shrimp and crab shell.
4. Developing flow charts and exercises in identification of hazards – preparation of hazard analysis worksheet, plan form and corrective action procedures in processing of fish.

PRACTICAL – III

Project Work

Visit to a fish breeding centre / fish farms and submit a project report

or

Visit to a feed manufacturing unit and submit a project report

or

Visit to a shrimp hatchery / shrimp farms and submit a project report

or

Visit to a shrimp processing unit and submit a project report

Chemistry
K.V.R GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL
SEMESTER-V
Paper - V (INORGANIC, PHYSICAL & ORGANIC CHEMISTRY)
45 hrs (3 h / w)

INORGANIC CHEMISTRY

UNIT – I

Coordination Chemistry:

8h

IUPAC nomenclature - bonding theories - Review of Werner's theory and Sidgwick's concept of coordination - Valence bond theory - geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory - splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes - low spin and high spin complexes - factors affecting crystal-field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds - structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

UNIT-II

1. Spectral and magnetic properties of metal complexes:

4h

Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility-Gouy method.

2. Stability of metal complexes:

3h

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

ORGANIC CHEMISTRY

UNIT- III

Nitro hydrocarbons:

3h

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerism of nitroalkanes leading to aci and keto form, Preparation of Nitroalkanes, reactivity -halogenation, reaction with HONO (Nitrous acid),Nef reaction and Mannich reaction leading to Micheal addition (mechanism not required) and reduction.

UNIT – IV

Nitrogen compounds:

12h

Amines (Aliphatic and Aromatic): Nomenclature, Classification into 1°, 2°, 3° Amines and Quarternary ammonium compounds. Preparative methods –

1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromamide reaction (mechanism).

Reduction of Amides and Schmidt reaction. Physical properties and basic character - Comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline - comparative basic strength of aniline, N-methylaniline and N,N-dimethyl aniline (in

aqueous and non-aqueous medium), steric effects and substituent effects. Chemical properties:
a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation e)

Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophilic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines, Diazotization.

PHYSICAL CHEMISTRY

UNIT- V

Thermodynamics

15h

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Calculation of w , for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes. State function. Temperature dependence of enthalpy of formation-Kirchoff's equation. Second law of thermodynamics. Different Statements of the law. Carnot cycle and its efficiency. Carnot theorem. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by
5. Text book of physical chemistry by S Glasstone
6. Concise Inorganic Chemistry by J.D.Lee
7. Advanced Inorganic Chemistry Vol-I by Satyaprakash, Tuli, Basu and Madan
8. A Text Book of Organic Chemistry by Bahl and Arun bahl
9. A Text Book of Organic chemistry by I L Finar Vol I
10. Advanced physical chemistry by Gurudeep Raj

K.V.R GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL

SEMESTER-V

Paper - VI (INORGANIC, ORGANIC & PHYSICAL CHEMISTRY)

45 hrs (3 h / w)

INORGANIC CHEMISTRY

UNIT-I

1. Reactivity of metal complexes: 4h

Labile and inert complexes, ligand substitution reactions - SN^1 and SN^2 , substitution reactions of square planar complexes - Trans effect and applications of trans effect.

2. Bioinorganic chemistry: 4h

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and Cl^- . Metalloporphyrins – Structure and functions of hemoglobin, Myoglobin and Chlorophyll.

PHYSICAL CHEMISTRY

UNIT-II

1. Chemical kinetics 8h

Rate of reaction - Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy.

2. Photochemistry 5h

Difference between thermal and photochemical processes. Laws of photochemistry- Grothus-Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield- Photochemical reaction mechanism- hydrogen- chlorine, hydrogen- bromine reaction. Qualitative description of fluorescence, phosphorescence, Photosensitized reactions- energy transfer processes (simple example)

ORGANIC CHEMISTRY

UNIT- III

Heterocyclic Compounds 7h

Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1,4,- dicarbonyl compounds, Paul-Knorr synthesis.

Properties : Acidic character of pyrrole - electrophilic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan.

Pyridine – Structure - Basicity - Aromaticity - Comparison with pyrrole - one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

UNIT-IV

Carbohydrates

8h

Monosaccharides: (+) Glucose (aldo hexose) - Evidence for cyclic structure of glucose (some negative aldehydes tests and mutarotation) - Proof for the ring size (methylation, hydrolysis and oxidation reactions) - Pyranose structure (Haworth formula and chair conformational formula).

(-) Fructose (ketohexose) - Evidence of 2 - ketohexose structure (formation of pentaacetate, formation of cyanohydrin its hydrolysis and reduction by HI). Cyclic structure for fructose (Furanose structure and Haworth formula) - osazone formation from glucose and fructose – Definition of anomers with examples.

Interconversion of Monosaccharides: Aldopentose to Aldohexose (Arabinose to

D- Glucose, D-Mannose) (Kiliani - Fischer method). Epimers, Epimerisation - Lobry de bruyn van Ekenstein rearrangement. Aldohexose to Aldopentose (D-Glucose to

D- Arabinose) by Ruff degradation. Aldohexose to Ketohexose

[(+) Glucose to (-) Fructose] and Ketohexose to Aldohexose (Fructose to Glucose)

UNIT- V

Amino acids and proteins

7h

Introduction: Definition of Amino acids, classification of Amino acids into alpha, beta, and gamma amino acids. Natural and essential amino acids - definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples - Glycine, Alanine, valine and leucine) by following methods: a) from halogenated carboxylic acid b) Malonic ester synthesis c) strecker's synthesis.

Physical properties: Zwitter ion structure - salt like character - solubility, melting points, amphoteric character, definition of isoelectric point.

Chemical properties: General reactions due to amino and carboxyl groups - lactams from gamma and delta amino acids by heating peptide bond (amide linkage). Structure and nomenclature of peptides and proteins.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by Atkins
5. Text book of physical chemistry by S Glasstone
7. Instrumentation and Techniques by Chatwal and Anand
8. Essentials of nano chemistry by pradeep
9. A Textbook of Physical Chemistry by Puri and Sharma
10. Advanced physical chemistry by Gurudeep Raj

K.V.R GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL

LABORATORY COURSE – V
Practical Paper – V Organic Chemistry
(at the end of semester V)

30 hrs (2 h / W)

Organic Qualitative Analysis:

50M

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point with suitable derivatives.

Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids, Aromatic Primary Amines, Amides and Simple sugars.

LABORATORY COURSE – VI

Practical Paper – VI Physical Chemistry
(at the end of semester V)

30 hrs (2 h/W)

1. Conductometric titration of HCl - NaOH.
2. Determination of molecular status and partition coefficient of benzoic acid in Benzene and water.
3. Determination of Surface tension of liquid
4. Determination of Viscosity of liquid.
5. Adsorption of acetic acid on animal charcoal, verification of Freundlich isotherm.

K.V.R GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL
SEMESTER-VI - Electives
ELECTIVE Paper – VII-(A) : ANALYTICAL METHODS IN CHEMISTRY
45hrs (3h / w)

UNIT-I

Quantitative analysis: **10h**

a) Importance in various fields of science, steps involved in chemical analysis. Principles of volumetric analysis ∴ Theories of acid-base, redox, complexometric, iodometric and precipitation titrations - choice of indicators for these titrations.

b) Principles of gravimetric analysis: precipitation, coagulation, peptization, coprecipitation, post precipitation, digestion, filtration and washing of precipitate, drying and ignition.

UNIT-II

Treatment of analytical data: **7h**

Types of errors, significant figures and its importance, accuracy - methods of expressing accuracy, error analysis and minimization of errors, precision - methods of expressing precision, standard deviation and confidence limit.

UNIT-III

SEPARATION TECHNIQUES IN CHEMICAL ANALYSIS: **8h**

SOLVENT EXTRACTION : Introduction, principle, techniques, factors affecting solvent extraction, Batch extraction, continuous extraction and counter current extraction. Synergism., Application - Determination of Iron (III)

ION EXCHANGE : Introduction, action of ion exchange resins, separation of inorganic mixtures, applications, Solvent extraction: Principle and process,

UNIT – IV **10h**

Chromatography: Classification of chromatography methods, principles of differential migration adsorption phenomenon, Nature of adsorbents, solvent systems, R_f values, factors effecting R_f values.

Paper Chromatography: Principles, R_f values, experimental procedures, choice of paper and solvent systems, developments of chromatogram - ascending, descending and radial. Two dimensional chromatography, applications.

UNIT -V **10h**

Thin layer Chromatography (TLC): Advantages. Principles, factors effecting R_f values. Experimental procedures. Adsorbents and solvents. Preparation of plates. Development of the chromatogram. Detection of the spots. Applications.

Column Chromatography: Principles, experimental procedures, Stationary and mobile Phases, Separation technique. Applications

HPLC : Basic principles and applications.

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL

LABORATORY COURSE – VII

Practical Paper – VII-(A) (at the end of semester VI) 30hrs - 50M

1. Conductometric Redox titrations.
2. Conductometric Complexometric titrations
3. Identification of aminoacids by paper chromatography

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL
Cluster Elective –III
ORGANIC
PAPER – VIII-C-1 : ORGANIC SPECTROSCOPIC TECHNIQUES
45 hrs (3 h / w)

UNIT-I **10h**
NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY

Nuclear spin, Principles of NMR-Classical and Quantum Mechanical methods. Instrumentation. Relaxation-spin-spin & spin lattice relaxation. Shielding constants, Chemical shifts, Shielding and Deshielding mechanism-Factors influencing Chemical shift. Spin-Spin interactions-AX, AX₂ and AB types. Vicinal, Geminal and Long range coupling- Factors influencing coupling constants.

UNIT – II **5h**

Spin decoupling, Deuterium exchange, Chemical shift reagents and Nuclear overhauser effect. Applications of NMR-1) Identification of Structural isomers, 2) Detection of H-bonding, 3) Detection of Aromaticity, 4) Distinction between Cis and Trans isomers. FT NMR and its Advantages.

UNIT-III **10h**

UV & VISIBLE SPECTROSCOPY

Electronic spectra of diatomic molecules. ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dienes, conjugated polyenes. Fieser-woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls.

Types of transitions, effect of solvent on electronic transitions, Chromophores, Auxochromes.

UNIT-IV **5h**

Electronic spectra of polyatomic molecules. Chemical analysis by Electronic Spectroscopy – Beer-Lambert's Law. Deviation from Beer's law. Quantitative determination of metal ions (Mn⁺², Fe⁺²).

UNIT-V **15h**

Mass Spectroscopy

Basic Principle, Molecular ion, Parent ion, fragment ions. Theory- formation of parent ions, representation of mass spectrum. Ionisation methods- EI, CI. Nitrogen rule, metastable ion, identification of (M+1),(M+2) base peaks, determination of molecular formula- eg: ethyl benzene, Acetophenone, n-butylamine, 1-propanal

REFERENCE BOOKS:

1. Electron Spin Resonance Elementary Theory and Practical Applications- John E. Wertz and James R. Bolton, Chapman and Hall, 1986.
2. Spectroscopic Identification of organic compounds – Silverstein, Basseler and Morrill.
3. Organic Spectroscopy- William Kemp.

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL

Cluster Elective –III

ORGANIC

PAPER – VIII-C-2 : ADVANCED ORGANIC REACTIONS

45 hrs (3 h / w)

UNIT – I

ORGANIC PHOTOCHEMISTRY

Organic photochemistry : Molecular orbitals, carbonyl chromophore–triplet states, Jablonski diagram, inter–system crossing.

Photochemical reactions : (a) Photoreduction, mechanism, influence of temperature, solvent, structure of substrates on the course of photo reduction,.

UNIT – II

ORGANIC PHOTOCHEMISTRY

Norrish cleavages, type I : Mechanism, acyclic cyclicdiones, influence of sensitizer, photo Fries rearrangement. Norrish type II cleavage: Mechanism and stereochemistry, type II reactions of esters : 1: 2 diketones, photo decarboxylation, Di - π methane rearrangement, Decomposition of nitrites – Barton reaction.

UNIT – III

PROTECTING GROUPS AND ORGANIC REACTIONS

Principles of (1) Protection of alcohols – ether formation including silyl ethers – ester formation, (2) Protection of diols – acetal,ketal and carbonate formation, (3) Protection of carboxylic acids – ester formation, benzyl and t-butyl esters, (4) Protection of amines – acetylation, benzylation, benzyloxy carbonyl, triphenyl methyl groups (5) Protection of carbonyl groups – acetal, ketal, 1,2–glycols formation.

UNIT – IV

Synthetic reactions : The Shapiro reaction, Stork–enamine reaction. Use of dithioacetals – Umpolung, phase transfercatalysis – mechanisms and use of benzyl trialkyl ammonium halides. Wittig reaction.

UNIT –V : NEW SYNTHETIC REACTIONS

Baylis–Hillman reaction, RCM olefin metathesis, Grubb catalyst, Mitsunobu reaction, McMurrey reaction , Heck reaction, Suzuki coupling and Sonogishira coupling, Ugi reaction, Click reaction.

Recommended Books

1. Molecular reactions and Photochemistry by Charles Dupey and O.L. Chapman.
2. Molecular Photochemistry by Turru.
3. Importance of antibonding orbitals by Jaffe and Orchin.
4. Text Book of Organic Chemistry by Cram,. Hammand and Henrickson.

- 1.Medicinal Chemistry by Dr. B.V.Ramana
- 2.Synthetic Drugs by O.D.Tyagi & M.Yadav
- 3.Medicinal Chemistry by Ashutoshkar
- 4.Medicinal Chemistry by P.Parimoo
- 5.Pharmacology& Pharmacotherapeutics R.S Satoshkar & S.D.Bhandenkar
- 6.Medicinal Chemistry by Kadametal P-I & P.II
- 7.European Pharmacopoeia

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (A), KURNOOL
LABORATORY COURSE – VII

Practical Paper – VII-(A) (at the end of semester VI) 30hrs - 50M

1. Conductometric Redox titrations.
2. Conductometric Complexometric titrations
3. Identification of aminoacids by paper chromatography

LABORATORY COURSE – VIII

Practical Paper – VIII-C-1: (at the end of semester VI) 30 hrs (2 h / W)

Spectral Identification of Un-Known Organic Compounds by Interpretation of UV, IR, ^1H NMR, ^{13}C NMR Spectral Data

Note: A minimum of 10 representative examples should be studied

LABORATORY COURSE – VIII

Practical Paper – VIII-C-2 (at the end of semester VI) 30 hrs (2 h / W)

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbutiric Acid
5. Preparation of Phenyl Azo β -naphthol

VII-C-3 Practical:- Project Work

Home Science

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

SYLLABUS FOR THE I Year 2017-18

MODULE- HSC.101 PSYCHOLOGY & PERSONALITY DEVELOPMENT

Learning Outcome

- Develop an understanding of human behavior and personality.
- Create awareness about various psychological processes underlying human behavior.
- Stimulate the student to think, introspect and work on to develop their Personality

Theory

Unit I Psychology -Introduction, scope and branches of Psychology

- ❖ Methods of Psychology- observational, experimental, clinical and survey
- ❖ Motivation- definition –Psychological basis- classification- physiological and psychological and social motives, unconscious motivation
- ❖ Emotion – Definition, components and development of emotion

Unit II Cognition and its processes- meaning, importance

- ❖ Attention- Attention types and its determinants
- ❖ Perception –Object perception and perceptual constancies, organization of perception

Unit III Learning & Memory- Definition and Importance,

- ❖ Methods of learning - Theories of learning- classical and operant conditioning, trial and error, acquisition of skills,
- ❖ Memory - types of memory, nature of forgetting and methods to improve memory

Unit IV Intelligence – Definition and factors affecting intelligence.

- ❖ Emotional Intelligence- Definitions and Significance
- ❖ Aptitude and Interest- Definition of the terms and importance

Unit V Personality- Definition, Dimensions & Types

- ❖ Factors influencing personality

References:

1. Anastasi, A. (1988). Psychological testing (6th edition). New York: Macmillan
2. Bloom, B.S., Madaus, G.J., Hastings, J.T. (1981). Evaluation to improve learning. New York: McGraw Hill.
3. Cronbach, L.J. (1990). Essentials of Psychological Testing (5th edition). New York:
4. Introduction to Psychology – Morgan C. T., King R. A.
5. Mangal, S.K, Introduction to Psychology

Learning Outcome:

To introduce structure and function various system of the body

Theory

Unit I Introduction to various systems of the body

- Animal Cell and Tissue : structure, functions of each component of the cell,
- Tissues: Functions of various types of tissues
- **Skeletal system**- Bones and Joints- Types & function
- **Nervous system**- Structure of neuron, reflex action , spinal chord , brain and their membrane, autonomic nervous system,

Unit II Digestive & Excretory system

- Structure and functions of salivary glands, stomach, small intestine, pancreas, and liver.
- Organs of excretion, their structure and functions (Kidneys, ureters and Urinary Bladder)
- Mechanism of urine formations.
- Skin - Structure and functions of skin, Regulation of body temperature.

Unit III Circulatory & Cardiovascular system

- Blood – Composition and functions of blood, Coagulation of blood & its significance. Blood groups and Rh factor
- Heart – Structure and functions of Human heart, Cardiac cycle.
- Blood Pressure – Systolic and diastolic Blood pressures

Unit IV Male & Female Reproductive System

- Anatomy of Spermatogenesis
- Structure and functions of Ovaries, fallopian tubes and uterus
- Menstrual cycle, ovulation and menopause.

Unit V Endocrine glands- Hormone and their influence on metabolism and reproduction

- Structure and function of pituitary gland, thyroid gland, Adrenal gland and Pancreas

References:

1. Best and Taylerr : Human Body.
2. Guyton A.C., & Hall, A. J. – Text Book of Medical Physiology.
3. K. Sembulingam – Essentials of Medical Physiology.
4. Chaterjee C. C.- Human Physiology.
5. N.Murugesh , 2000, Anatomy, Physiology and Human Health
6. VidyaRatan, 2001, 7th edition, Handbook of Human Physiology, Jaypee Brothers Medical Publisher's :, Pvt. Ltd

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MODULE- HSC103. HEALTH, HYGIENE & MICROBIOLOGY

Learning Outcome:

- To understand the concept of good health and means to achieve it.
- Understand the , classification morphology, growth and reproductive features of various micro organisms
- Acquire the skills in various sterilization techniques

Unit I Health – Definition & meaning

- Dimension of health – social, mental, spiritual, emotional, vocational
- Determinants of Health
- Indicators of health- concept of Mortality, Morbidity, Disability

Unit II Classification & Study of Microorganisms- in terms of morphology, growth, Nutrition and Reproduction

- Bacteria, Virus, Yeasts, Algae and Mould
- Study of Parasites – Entamoeba, Hookworm, Tapeworm

Unit III Mode of infection

- Food borne diseases caused by microorganisms-Typhoid, Cholera, Dysentery, Amoebic dysentery, Jaundice
- Diseases transmitted by Mosquitoes- malaria, falariaisis and control methods.
- Disease caused by direct contact through cuts and abrasions, skin disease, conjunctivitis, leprosy, tetanus

UnitIV Prevention & Control

- Hygiene - Meaning and importance
- Control of Micro-organisms – Sanitation, Sterilization & Disinfection- Physical and chemical method.

UnitV Immunity

- Immunity- definition & types
- Immunization schedule

References:

1. Frazier, W. Candwestnoff,D.C (1997) Food Microbiology, Tata McGraw Hill
2. A.S. Rao 2001 Introduction to microbiology, Prentice Hall of India
3. Anna k. Joshua, Microbiology, popular book depot, Madras
4. Pelczar and Reid, 1983, Microbiology, Tata McGraw-Hill Publishing Company LTD.
5. R. Ananthanarayanan, C.K.J. Paniker, 2001, Orient Longman Private Limited.
6. Hans G.Schlegel, 2002, 6th edition, Cambridge low price editions
7. General Microbiology , 1982, power &Daginawala, Himalaya Publishing House
8. Stanier R. Y., Adelberg, E.A. and Ingraham, J.L. (1989) General Microbiology.
9. Atlas R. M. (1988) Microbiology, fundamentals and application. Micmillon N. Y.

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MODULE- HSC.201. INTRODUCTION TO HUMAN DEVELOPMENT

Learning Outcome

- Introduction the concepts, importance and scope of human development
- Know about various areas and factors affecting growth and development
- Learn about pregnancy and care of the newborn

Theory

Unit I: Introduction

- Human Development: Definition, brief history and interdisciplinary nature
- Scope of the Human Development in contemporary society

Unit II: Lifespan Approach to Development

- Domains and stages of development
- Concepts and Principles of growth and development
- Determinates of Development- Heredity and Environment, Maturity and Learning

Unit III: Prenatal development

- Conception and Reproduction
- Prenatal development
- Pregnancy - care during pregnancy

Unit IV: Delivery and Birth process

- Stages of Delivery & Types of birth
- Characteristics of new born,
- Physiological changes and adjustments in post natal life
- Postnatal care of nursing mother

Unit V: Care of New Born Baby

- Care of full term and Premature babies
- Reflexes in new born
- Stimulation and its importance

Reference

1. Grace.J.Craig, 1976, Human Development, Prentice Hall INC, New Jersey, p-p 1-3.
2. Papalia D.E and Old S.W. 1978, Human Development, McGrawHillInc, London p-p 3-5.
3. Kaluger, George and Kaluger, Merriam Fair (1979). "Human Development: The span of life" ,C.V Mosby Company, New York.
4. Santrock, J. W. (2006). Child development. New York: McGraw Hil

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MODULE - HSC202.NUTRITIONAL BIOCHEMISTRY

Learning Outcome:

- Know the basic mechanisms involved in water and acid-base balance.
- Understand the macro nutrients and micro nutrients in terms of their composition, Classification, sources, functions and metabolism
- Learn about Vitamins & Minerals- their sources, function and deficiencies.

Unit I Introduction to Nutritional Biochemistry

- Definition and scope of biochemistry.
- Relevance of biochemistry to nutrition and health.
- Acid and Base balance, pH and Buffer
- Oxidation and Reduction reaction

Unit II Carbohydrates

- Composition, classification, sources and functions of carbohydrates
- Metabolism of carbohydrates- Glycolysis, gluconeogenesis, TCA cycle

Unit III Lipids

- Composition, classification, sources and functions of lipids
- Lipids metabolism- β -Oxidation and biosynthesis of fatty acids, Ketone bodies

Unit IV Proteins

- Definition, composition, classification, sources and function
- Metabolism of proteins - urea cycle

Unit V Micronutrients, Enzymes, Hormones

- Vitamins - Classification, function, sources and deficiency of vitamins.
- Minerals – sources, function and deficiency of Minerals

References

1. West E. S. Todd; Textbook of Biochemistry – Amerind Publishing Co. Pvt. Ltd.
2. Murry, R K Granner, D K Mayes, PA and Rodwell, V.W (1993); 23rd Ed Harpens Biochemistry.
3. Bamji, M. S, Prahlada Rao.N&Vinodini Reddy, 2003, Text book of Human Nutrition, Oxford & IBH Publishing Co. PVT. LTD, New Delhi p-p 105-107.
4. Davidson. S.S. & Passmore R. 1966, Human Nutrition and Dietetics, the Williams and Wilkins company, p-p 145-157.
5. Gordon Wardlaw Gordon M. & Insel Paul M., 1992, Contemporary Nutrition, Mosby year Book, Boston p-p 304-305.
6. Robert E.C. Wildman, Denis M. Medeiros – Advanced Human Nutrition, 2000, CRC Press, Boca Raton p-p 238-243.
7. Swaminathan, M. 1997, Essentials of Food and Nutrition, vol I Second edition, BAPPCO, Bangalore.p-p 3

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MODULE- HSC203.RESOURCE MANAGEMENT

Learning Outcomes:

- To inculcate skills in identifying, creating, selecting and using available resources judiciously with emphasis on maximization and conservation.
- To understand the scientific application of the process of management in the effective use of resources.

THEORY

Unit I Introduction to Resource Management

- Concept, scope and significance of management
- Management Process- its importance
- Characteristics of good manager

Unit II Approaches to Family Resource management –Meaning, Importance & Types,

- Interrelationship between Value, Goals and Standard
- Resources -Meaning, Classification, Importance and Characteristics
- Factors affecting management of resources.

Unit III Decision Making – importance, types, steps, method of resolving conflicts

- Planning – nature, characteristics, importance
- Organizing; Coordinating, Supervising, directing and guiding;
- Controlling- characteristics for effective control
- Evaluation – meaning, importance and methods

Unit IV Application of Management Process in:

- Time - significance, time norms, peak loads
- Energy – work curves, work units
- Ergonomics in home-Work simplification- Body mechanics, Mundel's classes of change work study techniques---pathway chart ,operation chart

Unit V Fatigue -meaning, types

- Methods of avoiding fatigue

References:

1. Home Management for Std. XI, by M.A. Verghese, N. N. Ogali, K. Srinivasan
2. Elements of Home Science by Premlata Mallick.
3. Management in the Home by M. Lilliam Gilberth.
4. Management in Family by Living, Nickell / Dorsey.

THEORY

Unit-I Food- Definition and objectives in the study of food

- Functions of food
- ICMR food group classification
- Factors affecting food selection

Unit-II Food Groups

- Cereals and millets-structure, composition and nutritive value, processing, use in variety of preparations.
- Pulses and legumes: composition and nutritive value
- Nuts and oils seeds: nutritive value, use in cookery
- Vegetables and fruits: classification, nutritional aspect, pigments and enzyme

Unit-III Food Groups

- Meat, fish, poultry and eggs: nutritive value, use in cookery
- Milk and Milk products: nutritive value, use in cookery
- Spices and condiments: nutritive value, use in cookery
- Beverages – classification and role of beverages in our diet

Unit-IV Food Preparation- Importance and objectives

- Methods of cooking
- Effect of cooking on nutritional values and digestibility
- Pressure cooking and microwave cooking.

Unit-V Improving nutritional quality of Food

- Germination, Fermentation, Supplementation, Substitution
- Fortification and enrichment
- Functional food its importance

PRACTICAL

1. Standardization of weights and measures of various food items.
2. Food preparation and understanding the cooking Procedure for different types of food- Cereals, Pulses, Milk, Egg, Fish and Meat, and Vegetable cookery
3. Preparation of Resource File

REFERENCES

1. Bamji MS, Krishnaswamy K, Brahman GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd.
2. Srilakshmi (2010). Food Science, 5th Edition. New Age International Ltd.
3. Wardlaw MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition, Mosby.
4. Dr. M. Swaminathan Hand Book of Food and Nutrition the Bangalore printing and Publishing Co.Ltd
5. VijayaKhader, Text Book on Food storage and Preservation

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HSC 302. HOUSING FOR BETTER LIVING

THEORY

Unit-I Introduction to House

- Importance of Housing
- Types of houses
- Functions of a house

Unit II Housing needs in different stages of family lifecycle and economic levels.

- Housing choice - Ownership Versus Renting -Advantages and Disadvantages
- Selection of site

Unit-III Planning of housing

- Principles of Planning and importance of planning space
- Orientation – importance, definitions –Aspect, Prospect, Privacy, Grouping, Roominess, Flexibility, Circulation, Sanitation, Light, Ventilation, Stuffiness, Cleanliness
- Factors to be considered while planning different rooms and ways to attain Good Orientation in Residential Building

Unit-IV Ergonomics in Planning for family living space

- Designing Service Space – Planning for efficient Kitchen, Kitchen layout
- Planning for efficient work centers and storage areas in the kitchen, bathroom, laundry and other areas of the house.
- Practical considerations of Water supply, Electricity, Plumbing, and drainage facilities

Unit-V Housing Finance

- Financial agency – HDFC, LIC and other banks
- State and Central Housing Scheme- HUDCO
- Housing problems, causes and remedial measures.
- Prevention of accidents and safety measures in the home.

PRACTICALS:

1. Learning to read House plan – Identification of Symbols
2. Site plan, Floor plan, Elevation, Perspective view, Land scape plan
3. Drawing house plan for different income groups
4. Drawing different types of Kitchen plan
5. Storage and cupboard design.
6. Preparation of Resource file

REFERENCES

1. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
2. M.N. Joglekar and Neelkamal Sharma, Housing Architectural Details, Hudco publication, New Delhi.
3. Home furnishing by Rett
4. Home management by Gross and Crandle
5. Textbook of Homescience- PremlataMultick

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HSC.303. TEXTILE FIBERS AND FABRIC

THEORY

Unit I Introduction to Textiles

- Classification of Textile fibers and their general properties.
- Polymerization- types of Polymer
- Factors affecting selection of fabric for various uses.

Unit II Textile fibers - Composition, manufacturing process, properties and uses

- Natural cellulosic fibers- Cotton, Flax and Jute.
- Natural Protein fibers- Silk and Wool.
- Synthetic fibers- Rayon, Acrylic, Nylon and Polyester

Unit III Yarns- Definition and types of Yarns

- Simple yarn: Single ply, cord, crepe, staple, filament, balanced, unbalanced, types of twist and effect of twist on fabric performance.
- Complex yarns: Slub, flock/ flack, Bounce/ loop, ratine, loop, knot, grandellechennille.
- Methods of spinning.

Unit IV Method of fabric construction

- Weaving – Definitions, Terms, Basic weaving operation
- Types of weave- Basic and Decorative, Dobby and Jacquard attachment
- Knitting- Types of knit stitches
- Other Methods of fabric construction - netting, knotting, felting, braiding and bonding

Unit V Fabric care.

- Darning and mending.
- Principles and methods of washing and finishing.
- Stain removal - principles, classification and techniques.
- Cleansing agents - water, detergent and soap. Other reagents - acidic and alkaline.
- Bleaching agents. Additives used in laundering - stiffening, blueing and optical brighteners.

PRACTICALS

1. Identification of textile fabrics by- visual, burning, microscopic and chemical tests.
2. Laboratory tests on fabrics- Fabric count and type of weaves.
3. Construction of different types of weaves and collection of their sample.
4. Color fastness to sunlight and washing of various fabrics.
5. Darning and mending of the fabric

REFERENCES:

1. Corbman Textiles- Fiber to Fabric. McGraw Hill.
2. James, W. & Sylvia, C. Crochet. Octopus book limited.
3. Allen, F. (1952) Handbook of Weaving Technology London Sir Issac Pitman. Murphy
4. W.S. Handbook of Weaving. Abhishek Publications, Chandigarh.
5. Majory L. Josheph "Essentials of Textile"

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HSC.401.FOOD PRESERVATION & PROTECTION

THEORY

Unit I Food Spoilage - its causes

- Perishable, semi-perishable and nonperishable foods.
- Factors affecting the growth of micro-organisms in the food.
- Food Sanitation and hygiene- Control and inspection

Unit II Food Preservation-Importance and principles of food preservation

- Methods of food preservation.
- Preservation at low temperature(Refrigeration and freezing)
- Preservation at high temperature(Pasteurization and sterilization)
- Preservatives- use and types
- Canning, Drying and Radiation.

Unit III Food Adulteration

- Food Adulterants-Types and their harmful effects
- Food Adulteration and its household methods of detection.

Unit IV Food Additives – definition and classification.

- General principles in the use of food additives issued by FAO, WHO.

Unit V Food Laws and Standards

- Responsible agencies for safe food.
- Present regulations / orders / standards related to food.
- Food packaging and labeling

PRACTICAL

- Survey of various preserved product and common additives available in the market
- Identification of food adulteration at household level
- Preparation of jams, jellies, pickles, squashes, sauce etc.

REFERENCES

1. B. Srilakshmi, Food Science, New age International (P) Limited, New Delhi.
2. Dr. M. Swminathan Hand Book of Food and Nutrition the Bangalore printing and Publishing Co.Ltd.
3. VijayaKhader, Text Book on Food storage and Preservation.

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HSC.402 INTERIOR DECORATION

THEORY

Unit I Interior Decoration- Meaning and importance and development of good taste

- Element of design

- Types of design.
- Factors influencing interior design

Unit II Application of elements of art and principles of design

- Elements of art - Line, form, colour, pattern, light, texture, space.
- Colours - classification, colour schemes and their effects.
- Principles of design -Harmony, Balance, Rhythm, Emphasis Scale and Proportion
- Application of art principles and elements of design in improving the appearance of home

Unit III Furniture –Types, Factors to be considered for selection

- Arrangement of furniture in different room
- Care and maintenance of furniture.
- Accessories- Types, Functions and Use of accessories in interior enrichment

Unit IV Flower arrangement

- Principles, selection and different flower arrangement styles.
- Points to be considered while selecting flowers and aids for arranging flowers
- Dry flower arrangement-preserving flowers by different method.

Unit- V Lighting arrangement-Natural and artificial arrangement for different rooms and Activity centers

- Wall, floor and window enrichment
- Table setting - general rules for table setting.
- Table manners and Etiquette.

PRACTICALS

1. Interior Design- Types of Design- Natural, Decorative conventional, Geometric abstract drawing/ painting/ clipping using magazines.
2. Application of principles of art in different rooms
3. Drawing of colour wheel and developing colour schemes.
4. Different types of Flower arrangement
5. Floor decoration – Rangoli and Alpana
6. Preparation & placement of accessories for interior enrichment.
7. Table setting-Indian and western
8. Preparation of Resource file

REFERENCES:

1. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
2. Art in Everyday Life - Harriet Goldstein Mac Millan Co. New York.
3. Colour Trends- Vol. I, Ethnic, Japanese, High- Tech Colors, AIM Creative Products Pvt. Ltd.
4. Colour- A guide to basic facts and concepts, John Wiley & Sons, New York.

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HSC.403 CLOTHING CONSTRUCTION

THEORY

Unit I Introduction - Importance and functions of clothing.

- Clothing construction - introduction, terminology and principles.
- Equipment and accessories used in construction.
- Sewing machine - parts, functions, care, maintenance, problems and general repair.

UNIT II Stitches – classification, hand and machine stitches

- Types of seams- plain, flat, ridge, decorative
- Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, mitring, trimming a corner
- Raw edge finishes, Fullness and ease

UNIT III Methods of garment construction suitable for different fabrics –

- Pattern making -Importance, Terminology used in Pattern making
- Methods of pattern making -Flat pattern, Drafting, Draping and Grading
- Rules of pattern making
- Pivotal point & style reading
- Fitting- principles of good fit, various fitting problems and its remedies

UNIT IV Preparation of fabric for cutting, layouts

- Fabric grain
- Preparatory steps-preshrinking, straightening & truing
- Layouts for patterns- general guidelines, basic layouts-lengthwise, partial lengthwise, crosswise, double fold, open, combination fold, Pinning, marking, cutting
- Layout for special fabrics- unidirectional, bold & large prints, plaids, stripes & checks
- Fabric widths & calculation of material required

UNIT V. Clothing – functions,

- Factors considered in selection of fabrics
- Family Clothing&household linen - selection for men, women, college going and children, carpets and upholstery etc.
- Selection of Ready- made garments and their evaluation
- Planning wardrobe

PRACTICAL

1. Sewing Machine description, use, care and repairs
2. Sewing equipment and Accessories
 - Simple Construction Techniques-Basic, Decorative and Embroidery Stitches
 - Seam and seam finishes, Neck line finishes, Plackets, Pockets and Sleeves
 - Fullness- Disposal of fullness- Dart, Gathers, Pleats, Tucks and Flare
 - Fasteners: Hook and eye, press button, Velcro, button.
3. Taking body measurements and preparing basic bodice block
4. Drafting, cutting, stitching and finishing a baby layette (zabala, nappy, bib or feeder)
5. Drafting, cutting, stitching and finishing of frock
6. Adaptation of bodice block into apron

REFERENCES:

1. Lewis ‘comparative clothing construction Techniques.’
2. ShobenAumstrong ‘Pattern cutting and making up’
3. Gohl EPG & Vilensky L.D. ‘Textile Science’ CBS publishers & Distributor, Delhi.
4. Natallia Brary, ‘More Dress pattern Designing’

5. Erwin Marbel D. clothing for moderns.

Annexure-III

PRACTICAL EXAMINATION PATTERN FOR YEAR END EXAMINATIONS:

Practical examination in Dept. of Home Science is held before II semester exam once in a year to test practical skills among the students. Total marks allotted for practicals are 50 for the duration of three hours.

The division of marks for practicals is as follows

Major Q	Minor Q	Identification/Listing /Calculations	Record	Viva	Total Marks	Max. Time
20 marks	10 marks	5 marks	10 marks	5 marks	50 marks	3 hours

PRACTICAL SYLLABUS

PRACTICAL I

HSC 301.Food Science &HSC 401. Food Preservation & Protection

Unit I.

1. Identification of different foods
2. Weights and measure
3. Food preparation and understanding the cooking Procedure for different types of food- Cereals, Pulses, Milk, Egg, Fish and Meat, and Vegetable cookery
4. Preparation of resource files

Unit II

1. Survey of various preserved product and common additives available in the market
2. Identification of food adulteration at household level
3. Preparation of jams, jellies, pickles, squashes, sauce etc.

PRACTICAL II:

HSC 302.Housing for better living &HSC.402Interior Decoration

Unit I

1. Learning to read House plan – Identification of Symbols
2. Site plan, Floor plan, Elevation, Perspective view, Land scape plan
3. Drawing house plan for different income groups
4. Drawing different types of Kitchen plan
5. Storage and cupboard design.

Unit II.

1. Drawing of colour wheel and developing colour schemes.
2. Flower arrangement
3. Floor decoration – Rangoli and Alpnana
4. Preparation & placement of accessories for interior enrichment.
5. Room Arrangements-bedroom,drawing,living,diningetc
6. Table setting-Indian and western
7. Preparation of Resource file

PRACTICAL III:

HSC303. Textile Fiber and Fabric & HSC 403.Clothing construction

Unit I

1. Identification of textile fabrics by- visual, burning, microscopic and chemical tests.
2. Laboratory tests on fabrics- Fabric count and balance of cloth.
3. Laboratory Identification of different types of weaves and collection of their sample.
4. Color fastness to sunlight and washing of various fabrics.
5. Darning and mending of the fabric

Unit II

1. Sewing Machine description, use, care and repairs
2. Sewing equipment and Accessories
3. Simple Construction Techniques
4. Basic, Decorative and Embroidery Stitches-Seam and seam finishes, Neck line finishes, Plackets, Pockets and Sleeves
5. Fullness- Disposal of fullness- Dart, Gathers, Pleats, Tucks and Flare
6. Fasteners: Hook and eye, press button, velcro, button.
7. Taking body measurements and preparing basic bodice block
8. Drafting, cutting, stitching and finishing a baby layette (zabala, nappy, bib or feeder)
9. Drafting, cutting, stitching and finishing of frock
10. Adaptation of bodice block into apron

Annexure I
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SYLLABUS FOR THE V& VI SEMESTER 2017-19

HSc.501.FAMILY DYNAMICS

Theory - 4 lec / week

External- 75marks

Internal-25 marks

Learning Objectives: To orient the students with the changing trends in family and marriage.

Theory

Unit I- Family

- Types and functions of family.
- Merits and demerits of nuclear family and joint family.
- Recent trends in modern family

Unit II-Stages of family life cycle- Handling demands in various stages of family life cycle

- Family in the beginning.
- Expanding family and Contracting stage

Unit III-Problems and adjustments in family life-

- Factors that promote and problems of inter-caste, inter-religion and interstate marriages
- Achieving harmony and understanding between each other
- Adjustment in marriage, sex, finance & in-laws.

Unit IV- Marriage

- Functions of marriage.
- Factors to be considered in the choice of marriage partner
- Arranged marriage & free choice marriage –advantages and disadvantages.

Unit V Legal aspects of marriage and family

- Laws related to marriage and divorce, adoption, property
Hindu marriage act, Dowry prohibition act.
Domestic violence act

References

1. Rice F.P. Marriage and Parenthood. Allyn and Bacon Inc. Toronto.
2. Rice F.P. 1983. Contemporary Marriage. Allyn and Bacon Inc. Toronto.
3. Reddy VNK, 1978. Marriages in India, The Academic Press Gurgaon.
4. Landis and Landis 1968. Building a Successful Marriage Prentice Hall Inc.
5. Duval I.M. 1962 Family Development J.P. Lippincott Co.
6. Winch R.F. 1963. The modern Family, Holt Rinehart and Winston.

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HSC.502. LIFE SPAN DEVELOPMENT

Theory - 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Learning objectives:

- To create awareness about development during the life span.
- To understand the influence of sociocultural environment on development.

Theory

Unit 1 Development during Infancy

- Physical development - patterns of growth & motor skills
- Emergence of emotions and social skills during infancy and babyhood
- Language Development infancy - Acquisition and factors affecting
- Cognitive development during infancy

Unit 2 Early Childhood Period – Importance and characteristics

- Physical and Motor Development
- Characteristics of preoperational thought and factors affecting cognitive development
- Characteristics, stages and factor affecting language development
- Socio-emotional development -characteristics and classification of children's emotion

Unit 3 Late Childhood – Importance and characteristics

- Physical and motor development – pattern and factors affecting
- Cognitive development during late childhood period
- Social development- Influence of school and peer group and childhood gangs

Unit 4 Adolescence -Meaning, importance and characteristics

- Puberty - Physical, Physiological and Psychological changes
- Early and late maturation and their effect on boys and girls
- Emotions during adolescence - heightened emotionality causes and effect.
- Cognitive development during adolescence

Unit 5 Role of Family, School and Peer on overall development of Children

- Identity development and identity problems of Adolescence
- Socialization process, agents and factor affecting socialisation
- Parenting styles - types and impact on children

PRACTICALS

1. Assessment of growth and development by using anthropometry – preschooler
2. Case study of preschool/ school age children of different age groups
3. Administer and Interpretation of self- esteem scale/ life satisfaction scale
4. Group discussion on study of adolescent problems
5. Development of resource files on various aspects of human development.

References

1. Berk, L. E. (1996). Child Development, New Delhi: Prentice Hall
2. Santrock, J.W. (2007). Life Span Development. Tata McGraw Hill, New Delhi
3. Papalia D.E and Old S.W. 1978, Human Development, McGrawHillInc, London.
4. R.P. Devadas&N.Jaya, A text book on Child Development, Macmillan India Ltd.

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HSc.503. TEXTILES FINISHES

Theory - 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Learning objective: To develop knowledge and skill in finishing of fabrics

Theory

Unit 1. Fabric finishes – importance, classification, method and use

- Mechanical Finishes- Stentering, Calendaring- Embossing, Moire Effect, Sanforizing, Pressing, Decating, Napping, Flocking, Beetling and Softening
- Chemical- Mercerizing, bleaching Additive- Sizing
- Special finishes- Water proof, moth proof, acid and basic finishes.

Unit2. Dye and Dyeing

- Dyes and their classification – natural and synthetic.
- Types of natural dyes – plant, animal and mineral origin.
- Types of synthetic dyes – soluble, insoluble and ingrain, their structure and properties. Direct, basic, acid, vat, reactive, naphthol, sulphur, mordant, disperse dyes and pigment.

Unit 3.Preparatory processes for dyeing and printing - wetting, scouring, bleaching and mercerization.

- Methods of dyeing-Fiber, Yarn, Fabric, Garment
- Tie-dye and batik painting – types and methods.

Unit 4. Printing- Type- hand and machine printing

- Printing techniques - Block, screen, roller, spray, stencil, duplex, discharge, resist, warp, flock, photographic and heat transfer printing.
- Styles of printing- Direct, Resist, Discharge printing
- Methods of Printing- Flat bed, Roller, Block, Discharge, Resist, Stencil, Bubble, Burn out, and Flocking

Unit 5.Traditional Textiles of India

- Embroidery – introduction, types and accessories.
- Indian embroidery stitches
- Traditionally dyed, printed, woven and embroidered textiles present in various states of India – Chanderi, Brocade, Patola, Phulkari, Kashmiri, Baluchari, Kasuti etc.
- Hand painting– introduction and methods.

Practicals

1. Preparatory processes for dyeing and printing -wetting, scouring, bleaching and mercerization
2. Dyeing of cotton with direct dye
3. Preparation of tie - dye samples and dyeing tied samples with different colour combinations
4. Preparation, selection of material, dye and design for batik
5. Waxing, dyeing and after treatment
6. Preparation of value added articles by tie-dyeing/block printing/Batik painting
7. Fabric painting

References:

1. ShobenAumstrong ‘Pattern cutting and making up’
2. Gohl EPG & Vilensky L.D. ‘Textile Science’ CBS publishers & Distributor, Delhi.
3. NatalliaBrary, More Dress pattern Designing.

Theory - 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Learning Objectives:

1. To orient the students to the role, rights and responsibilities of consumer.
2. To understand the market and marketing strategies influencing the consumer behavior.

Theory

Unit-I.Basic terminology, concept and basics of household economics

- Human wants- nature and classification,
- Standard of living- definition, constitution and ways of improving

Unit II.Family income – Sources and types of family income

- Functions of money
- Supplementing family income

Unit III. Money management in the home

- Budget – meaning and advantages of budgeting-steps in making budget for a family
- Engel's law of consumption
- Factors affecting the budget
- Account keeping – importance and account keeping systems

Unit IV.Savings and investment

- Importance of savings
- Types of savings – Post office, LIC, Unit Trust, Chit funds, Banks etc.
- Types of investment.Importance of consumer education

Unit V. Importance of consumer education

- Consumer rights
- Consumer laws
- Consumer problems and protection
- Role and responsibilities of homemaker as a consumer
- Factors affecting purchase and guidelines for wise purchase

PRACTICALS

1. Identifying Human Wants – A. Necessaries B. Comforts C. Luxuries
2. Budget plans for different income groups- Low, middle and high income group
3. Interview of any head of family and collect information on their saving
4. Study awareness level of housewife on consumer protection

REFERENCES

1. Khan, Martin 2001, consumer behavior , new age international pvt.Ltd.
2. Nickell P. and Dorsey J.M “Management for living”
3. PremavathySeetharaman, Sonia Batra&PreetiMehra “An Introduction to to Family Resource management” 1st edition, 2005, CBS Publishers & Distributors.
4. PremlataMullick “ Textbook of Home Science ”, 4th edition, 2016, Kalyani Publishers

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HSC.505. FAMILY & COMMUNITY NUTRITION

Theory - 4 lec / week

External- 75marks

Practical – 2 hrs/week

Internal-25 marks

Learning objectives: To understand the importance and planning of balanced diet for family and community

Theory

Unit 1.Meal Planning - Balanced diet, food groups

- Principles of planning diets, Steps involved in meal planning
- Recommended Dietary Allowance for Indians, Food exchange list

Unit 2. Maternal nutrition

- Nutrition during pregnancy -Physiological changes and complication
- Nutritional requirement during Lactation.
- Effect of malnutrition on maternal health and pregnancy outcome.
- Nutrition during Infancy- Breast feeding, weaning and supplementary foods

Unit 3. Nutrition in Children and Adolescence

- Nutrition in preschool age-physiological development and food intake, development of food habits, diet plan.
- Nutrition of school children and adolescence – growth and nutrient needs and requirements – Food choices – Eating habits, Importance of snacks and packed lunch

Unit 4. Nutrition in Adult and Old Age

- Nutritional requirement of Adult – Reference man and women
- Nutrients requirements during various physical activity
- Nutrition during old age - physiological changes in elderly -Factors affecting food intake and nutrient use, Nutrition related problems in old age and their management

Unit 5. Community Nutrition- Methods of nutritional assessment

- Anthropometry, Diet surveys and Clinical and Biochemical assessment
- Community health & nutrition programmes- ICDS-Supplementary feeding, Health and nutrition education, Prophylaxis programme, mid-day meal scheme etc.
- National and International organizations involved in Nutritional programme- NIN ICMR, FAO,WHO, UNICEF, CARE

PRACTICALS:

1. Identifying rich source of nutrients and Use of Exchange lists for calculation of diets
2. Planning and preparation of a balanced diet for adult man and woman
3. Planning and preparation of a balanced diet for pregnant women and Lactating mother
4. Planning and preparation of a balanced diet for a School age child and Adolescence
5. Planning and preparation of a balanced diet for elderly
6. Nutritional Assessment through Anthropometry

REFERENCES

1. Srilakshmi, B., Dietetics, New Age International (P) Ltd., 6th edition, 2012.
2. Subhangini A.Joshi, Nutrition and Dietetics
3. Raheena Begum, Textbook of Food, Nutrition and Dietetics.

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HSC. 506. HOME SCIENCE EXTENSION EDUCATION

Theory - 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Learning objectives:

1. To understand the concept of extension and communication its relevance for self & national development.
2. To know the role of Home Science extension in community development.

Unit-I Extension Education – Meaning, Definition and Scope

- Home Science Extension – Characteristics, Principles, Needs and Objectives
- Role and qualities of an extension worker

Unit-II Teaching and Learning Process – Characteristics of learning,

- Elements of learning situation.
- Steps in Extension teaching and learning process,
- Phases in Extension education process,
- Principles of Extension teaching
- Difference between formal and informal education

Unit-III Extension Teaching Methods – Classification of Extension Teaching Methods

- Description of Teaching Methods
- Factors affecting selection and use of Extension teaching methods.

Unit-IV Teaching aids – Audio - Visual aids, Cone of Experience

- Classification of Audio - Visual aids
- Extension Methods and Audio - visual aids

Unit-V Communication – Concept, Elements and functions of Communication

- Principles of effective communication
- Barriers to Communication

PRACTICALS

1. Lecture cum Demonstration of recipe/ teach a craft etc.
2. Project work on – i) adult education ii) family planning iii) Health & Hygiene etc. Programme planning and Execution in the community and evaluation
3. Preparation of Teaching aids and display of Visuals and Exhibits – Charts, Posters, Flash cards etc.
4. Putting up a display – A. Bulletin Board B. Exhibition Visit to self-help groups
5. Preparation of Resource file on different extension programme

REFERENCES

1. S.V. Supe “An introduction to extension education” 1983, Oxford & IBH Publishing Co, New Delhi.
2. O.P Dahamma “ Extension and Rural welfare” 1981. Ram Prasad and Sons, Agra Bhopal.
3. Dr. A. Adivi Reddy “Extensional Education”, Sreelakshmi press, Bapatla.

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HSC. 601. THERAPEUTIC NUTRITION

Theory – 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Unit 1: Diet therapy and nutrition care process

- Principles, purpose and significance of therapeutic diet.
- Dietitian- classification, code of ethics and responsibilities
- Diet counseling and Nutrition Education
- Indian Dietetic Association- introduction and objectives

Unit 2: Therapeutic diets

- Therapeutic adaptation of normal diet- routine hospital diet- clear fluid, full fluid, soft and regular normal diet
- Special feeding methods - enteral and parenteral nutrition
- Pre and postoperative diets

Unit 3: Diet in Malnutrition

- Diet in Nutritional deficiency – PEM, Anaemia
- Under weight- causes symptoms, Dietary management
- Over weight and obesity- causes, symptoms, dietary management

Unit 4: Dietary management of common disorders- etiology, clinical features, diagnosis and nutritional management of the following:

- Infections and Fevers -Short term and long term (Typhoid & Tuberculosis)
- Stomach and Intestine disorders -Gastritis and Peptic ulcers
- Small and Large Intestines disorders – Diarrhoea, Constipation, Lactose intolerance, Steatorrhea and Celiac disease
- Liver disorders– Infective hepatitis

Unit 5 Dietary management of metabolic disorders

- Diet in Cardio-Vascular diseases: hypertension and atherosclerosis.
- Diet in Kidney disease – Nephritis.
- Diabetes Mellitus:- Classification, Causes, Test, Diet Therapy
- Diabetes in children and pregnancy

PRACTICALS

1. Modification of normal diet.
2. Planning and preparation of diets for the following conditions:
 - Diet in fever,
 - Diet in Diarrhea and constipation and peptic ulcers
 - Diet for under nutrition and obese.
 - Diet in Hypertension
 - Diet in Diabetes
3. Visit to Dietary Department

References

1. Srilakshmi, B. Dietetics. Newage international publishers, New Delhi

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HSC.602. FASHION DESIGN AND MERCHANDISE

Theory- 4lec/week

External-75 marks

Practical- hrs/week

Internal-25 marks

THEORY

UNIT 1: INTRODUCTION TO FASHION DESIGN

- Fashion terminology
- Factors influencing fashion
- Fashion cycles
- Fashion adoption theories

UNIT 2: AESTHETIC IN DRESS

- Elements of design: Line , form , texture , colour
- Principles of design : line, harmony , Balance, Rhythm Emphasis and proportion
- Croqui

UNIT 3: MERCHANDISING PRACTICES – meaning, concepts

- Principles and Factors influencing merchandising practices.
- Role and responsibility of the merchandiser.

UNIT 4: CONSUMER BUYING

- Budget
- Advertising
- Labelling
- Standards

UNIT 5: READYMADE CLOTHING & CARE & STORAGE OF CLOTHES

- readymade garments: Advantages & Disadvantages
- Handmade garment : Advantages & Disadvantages
- Tailor made garments: Advantages & disadvantages
- Care of different fabrics –cotton,woolen,silk & synthetics
- Consideration for storing clothes and dry clothing

PRACTICALS

- Sunlight test for colour fastness
- Stain removal
- Drafting and construction of salwar and kameez
- Drafting and construction of a house coat (nighty)
- Drafting and construction of blouse

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HSC.603.ENTREPRENEURSHIP MANAGEMENT

Theory-4lec/week

External-75 Marks

Practical-2hrs/week

Internal -25 Marks

Learning Objectives:

- 1.To orient the students to the concept, need and process of entrepreneurship.
- 2.To understand the market, types of business, the parameters for selecting and running an enterprise successfully.

THEORY:

UNIT 1: Entrepreneurship- Definition, Importance and signification

- Characteristics of good entrepreneur
- Types of Entrepreneurship
- Role of Entrepreneur in Economic development

UNIT 2: Entrepreneurship development

- Stages of Entrepreneurship development
- Entrepreneurial Process : Discovery, Developing a Business plan, Resources, managing, the company, Harvesting
- Entrepreneurial development cycle: Stimulations, Supporting, Sustaining
- Factors affecting entrepreneurial behavior

UNIT 3: Idea Generation and Opportunities Assessment: Introduction

- Sources of new idea
- Techniques for Generating Ideas
- Steps in idea generation process
- Transformation of ideas into opportunities

UNIT 4: Setting up a enterprise

- Steps in setting up a new enterprise
- Identification of business opportunity, Generation of business idea, Feasibility study, Preparation of business plan, Launching the Enterprise
- Steps for starting company: Application, preparation, memorandum, Documents, Fees, Certificates
- SWOT Analysis
- Quality control

UNIT 5: Entrepreneur Opportunities among women's

- Role, Scope & opportunities of women entrepreneur
- Importance of women Entrepreneurship
- Problems Faced by women Entrepreneur
- Women entrepreneur successful entrepreneur
- Entrepreneurship in Home Science
- Employment opportunities available for Home Science graduated

PRACTICAL

1. Visit to Enterprise- small scale/ self help group
2. SWOT analysis with respect to entrepreneurial competencies.
3. Case profiling of successful women entrepreneurs and enterprises.
4. Developing a business plan for a micro enterprise-Open Nursery school/Day care center for the children/Boutique/Diet clinic/Preservation & Catering Services/ Interior Design office etc.

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Elective1. HSC.604. A. EARLY CHILDHOOD EDUCATION

Theory - 4lec / week

External- 75marks

Practical -2hrs/week

Internal-25 marks

Learning objectives

1. To enlighten students about need and importance of early childhood education.
2. To know about the requirement and activities of ECE to bring out all round development in children

Theory

Unit-I Education for preschool children

- Need and importance of preschool education,
- Objectives of preschool education.
- Types of preschools-Nursery, Kindergarten, Montessori, Anganwadi, Balwadi and Creches etc.

Unit-II Physical set up of a preschool

- Building, site and plan, building and equipment- indoor and outdoor equipment
- Staff and personnel- teacher, assistant, etc.
- Qualities of preschool teacher
- Records and reports maintained in a preschool

Unit-III Curriculum for the preschool -Major goals of a preschool curriculum

- Types of preschool curriculum-long term, short term, weekly and daily planning,
- Daily program--model program- importance of each activity in a day program (medical check-up, outdoor and indoor play, snack, rest, story, rhyme and creative activity)

Unit-III Play and play equipment for preschoolers

- Values of play
- Play activities for preschool children
- Selection and care of toys and play equipment.

Unit-V Home-school relations-significance, ways of developing home-school relations

- Parental participation in preschool programme
- PTA meeting and its importance

PRACTICAL

1. Observation and recording development of preschool child and teacher
2. Observational visit to Early Childhood Centers- anganwadi/ other schools
3. Planning activities using thematic approach for all round development of the child
4. Preparation of Teaching Aids
5. Participation in preschool
6. Preparation of resource file

REFERENCES

1. Jagannath Mohanthy and Bhagyadhar Mohanthy, 2000, "Early Childhood Care and Education", Deep and Deep Publications PVT limited, New Delhi p-p.1-4.
2. J.S.Grewel, 1984, "ECE, foundations and Practice", National Psychological Corporation, Agra, New Delhi,

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ELECTIVE-1.H.Sc. 604 (B). SOCIOLOGY

Theory - 4lec / week

External- 75marks

Internal-25 marks

Learning Objectives:

1. To develop an understanding of the society and its constitution and emerging problems

Unit-I

- Sociology – Definition, nature and importance
- Its relation to other social sciences,
sociology and history, sociology and economics, sociology and social psychology, sociology and political science, sociology and anthropology
- Society – Definition,, nature, characteristics
- Culture-Definition, nature, functions, and evolution of culture

Unit-II

Socialization-Definition, factors of socialization, types, agents ,agencies and stages of socialization

social process-meaning, classification of social process

Unit-III

- Social groups – Definition, classification and characteristics of social groups – primary & secondary groups, formal and non-formal groups, and in & out groups

Communities in India

Unit-IV

- Village Community – Definition, Features ,Characteristics of Indian villages, changes in Indian rural life
- Urban community –Definition, Features of urban community, factors contributing to growth of cities and major problems in cities

Unit-V

problems of women in Modern India - Increasing violence against women, Gender discrimination, Harassment of women at work place and exploitation of women women in media, of female education, problems related women

employment and unemployment

B. Constitution of legislation in support of women's cause

- Awareness of women regarding their rights

- Rights and protection given to women by the constitution of India
- Strategies for the protection of women rights and rehabilitation of women

Reference :

1. RM. Sharma, Principles of Sociology, Media Promoters and publishers Pvt. Ltd., Bombay 1982.
2. VijayaVizeBhushanSachdeva, Introduction to Sociology, KitabMahal Allahabad, 1970
3. G.R. Madan, Indian Social Problems Second Edition , Allied Publishers Pvt Ltd. 1973
4. Vidyabhushansha, Text book of Sociology
5. K.Singh- Urban Sociology- Prakash and Kendra- Sivapur Road, Lucknow- 226020, 1992

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ELECTIVE-1HSC. 604 C. COMMUNITY DEVELOPMENT

Theory - 4 lec / week

External- 75marks

Practical - 2 hrs/week

Internal-25 marks

Learning objective: To create awareness about community living and plan developmental programme

Theory

Unit-I Community Development – Definition and Nature

- Areas of activities under Community Development
- Principles of Community Development

Unit-II Leadership – Qualities and role of leader, classification of leaders,

- Types of leadership, methods to identify leaders,
- Leadership styles, methods of training leaders for social Mobilization

Unit-III Program Planning & Evaluation

- Objectives and Principles of Program Planning in Extension
- Methods to find out felt and unfelt needs of the community
- Steps in Program Planning
- Evaluation – Definition, steps in evaluation process, SWOT analysis

Unit-IV Diffusion & Adoption

- Diffusion – Elements of diffusion, Characteristics of innovations
- Adoption – Stages of adoption of innovation, Adopter categories
- Participatory Rural Appraisal(PRA) – Principles, Techniques & Methods and Importance of PRA

Unit-V Development Programs in India

- Community Development Program, NES - National Extension Service, NDP – National Demonstration Program, T & V System, DWCRA, KVK, ICDS, IRDP, TRYSEM, NREGA , Youth Clubs

PRACTICALS

1. Visit to a community/ village to find out the socio economic needs of the people
2. Plan an activity to create awareness among women and children of community surveyed according to their needs and interest
3. Lecture cum group discussion and Method demonstration
4. Execute program in the community surveyed and evaluate performance
5. Community development- group project at the end of the year
6. Preparation and display of teaching aids, posters, charts, flash cards, Display of bulletin Board

REFERENCES

1. A guide book for anganwadi workers. Published by department of women & child development. Ministry of Human resource development. Government of India.
2. Ramala M. Basamusa Hema Subramanyam “Assistance for women’s development from national agencies – Employment programmes”
3. O.P. Dahamma “Extension and Rural welfare”, 1981. Ram Prasad and Sons Agra Bhopal.

BIOTECHNOLOGY
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
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(w. e. f. 2017-2018)

DEPARTMENT OF BIOTECHNOLOGY
THIRD YEAR – V SEMESTER SYLLABUS
PAPER V- MOLECULAR BIOLOGY

Unit I :

Genome Structure, Nucleic Acid Composition, Watson and Crick model of DNA, Types of DNA, Concepts of genetic material, Experiments to prove DNA as genetic material (Griffith Experiment, Hershey- Chase Experiment), Types of RNA, RNA as genetic material.

Unit II:

DNA Replication: Enzymology of replication (DNA polymerase I, Pol II, and III, helicase, topoisomerase, single strand binding proteins, DNA melting proteins, primase). Proof of semiconservative replication, Replication origins, initiation, elongation, and termination. Rolling circle replication.

Unit III:

DNA damage and repair: causes and types of DNA damage, mechanism of DNA repair: Photoreactivation, base excision repair, nucleotide excision repair, mismatch repair.

Unit IV :

Transcription: Enzymatic synthesis of RNA, Basic features of transcription, structure of prokaryotic RNA polymerase (core enzyme and holo enzyme, sigma factor), concept of promoter (Pribnow box, -10 and -35 sequences), Four steps of transcription (promoter binding and activation, RNA chain initiation, chain elongation, termination and release). Polycistronic and monocistronic m-RNA. Reverse transcription.

Unit V :

Genetic code and Protein synthesis: Genetic code, Features of genetic code, Splicing, Post transcriptional modification, Codon- anticodon interaction- Wobble hypothesis, Initiation, Elongation and Termination of proteins, Post translational modification.

Unit VI :

Gene Expression and Regulation : Regulation of gene expression, Clustered genes and the operon concept- Negative and Positive control of the Lac operon, Regulation of gene expression in eukaryotes.

BOOKS RECOMMENDED :

1. Karp, G. (2010). Cell and Molecular Biology: Concepts and Experiments. VI Edition. John Wiley & Sons, Inc.
2. De Robertis, E.D.P. and De Robertis, E.M.F. (2006). Cell and Molecular Biology. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
3. Becker, W.M., Kleinsmith, L.J., Hardin, J. and Bertoni, G. P. (2009). The World of the Cell. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
4. Watson, J. D., Baker T.A., Bell, S. P., Gann, A., Levine, M., and Losick, R., (2008) Molecular Biology of the Gene (VI Edition.). Cold Spring Harbour Lab. Press, Pearson Pub

ANNEXURE - II

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DEPARTMENT OF BIOTECHNOLOGY
THIRD YEAR – V SEMESTER SYLLABUS

PRACTICALS

PAPER V- MOLECULAR BIOLOGY

1. Effect of UV radiations on the growth of microorganisms.
2. Determination of absorption maxima of DNA and RNA and their quantification.
3. Quantitative estimation of RNA.
4. Quantitative estimation of DNA.
5. Isolation of plasmid DNA from bacteria.
6. Isolation of genomic DNA from E.coli.
7. Isolation of DNA from sheep liver.
8. Isolation of DNA from plant leaves(Rice or Tobacco or any other plant)
9. Separation of DNA by Agarose Gel Electrophoresis.
10. Purity analysis of the nucleic acid

ANNEXURE - VI

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DEPARTMENT OF BIOTECHNOLOGY
THIRD YEAR – VSEMESTER SYLLABUS
PAPER VI- RECOMBINANT DNA TECHNOLOGY

Unit I :

Restriction and modification: Classification of restriction endonucleases. Enzymes used in molecular cloning; Polymerases, Ligases, Phosphatases, Kinases and nucleases.

Cohesive end ligation, methods of blunt end ligation.

Unit II :

Cloning vector : Plasmid- pBR 322, pUC18, Bacteriophage- Lambda phage(Insertional and Replacement vectors) Cosmids.

Expression of cloned genes: General features of an Expression vector. Expression of a eukaryotic gene in prokaryotes – advantages and problems

Unit III :

Screening methods: Selection of transformed cells(Insertional inactivation and Blue white screening). Electrophoresis- Agarose Gel electrophoresis, Blotting techniques- Southern, Northern, Western blotting.

Unit IV :

Methods of gene transfer in prokaryotes and eukaryotes-

Physical methods- Microinjection, Microprojectile bombardment/gene gun method, Electroporation.

Chemical methods : CaCl₂ method, PEG, Lipofection.

Biological methods- Agrobacterium mediated transformation, Retroviral infection.

Unit V :

Methods of gene sequencing – Maxam- Gilbert's and Sanger's dideoxy chain termination methods, Construction and Advantages of genomic and cDNA libraries. Polymerase chain reaction technique, DNA fingerprinting.

Unit VI :

Applications of recombinant DNA technique in Agriculture :

Transgenic plants – Bt Cotton, Golden Rice, Oxidative Stress resistant plants, Senescence resistant plants, Drought resistant plants.

Applications of recombinant DNA technique in Medicine :

Production of insulin, Growth hormone, Tissue plasminogen activator and HBs Ag vaccine

BOOKS RECOMMENDED :

1. Brown TA. (2006). Gene Cloning and DNA Analysis. 5th edition. Blackwell Publishing, Oxford,U.K.
2. Clark DP and Pazdernik NJ. (2009). Biotechnology-Appling the Genetic Revolution. Elsevier Academic Press,USA.
3. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press,Washington
4. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford,U.K.
5. Sambrook J, Fritsch EF and Maniatis T. (2001). Molecular Cloning-A Laboratory Manual. 3rd edition. Cold Spring Harbor Laboratory Press.

ANNEXURE - VII

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(w. e. f. 2017-2018)

DEPARTMENT OF BIOTECHNOLOGY THIRD YEAR – VSEMESTER SYLLABUS

PAPER VI- RECOMBINANT DNA TECHNOLOGY

PRACTICALS

1. Problems in genetic engineering.
2. Transformation in bacteria using plasmid.
3. Restriction digestion of DNA and its electrophoretic separation.
4. Ligation of DNA molecules and their testing using electrophoresis.
5. Activity of DNAase and RNAase on DNA and RNA.
6. Isolation of plasmid DNA.
7. Demonstration of PCR.

III B.Sc - BIOTECHNOLOGY SYLLABUS
SEMESTER – VI – ELECTIVES
(Revised in June 2017)

PAPER – VII - A

Elective paper -Plant & Animal Tissue Culture

UNIT I:

Plant cell and tissue culture: Introduction to Plant cell and tissue culture ,laboratory facilities, sterilization methods in tissue culture, Tissue culture media (composition and preparation), Callus and suspension cultures-applications.

UNIT II:

Tissue and micro-propagation: Single cell culture, Haploid and Triploid production-applications, Protoplast culture, Somatic hybridization, Virus free plants, Micro-propagation.

UNIT III:

Animal cell and tissue culture: Animal tissue culture laboratory facilities, Animal culture media, growth factors ; Characters of cells in culture: Contact inhibition, anchorage dependence, Cell – Cell communication, Cell senescence, cell and tissue response to trophic factors.

UNIT IV:

In vitro fertilization and Embryogenesis- Fertilization of sperm and oocytes, Cleavage-Morula, Blastulation & Gastrulation.

IVF – Infertility in male and female: causes, diagnosis and management; Sperm banks, frozen embryos, IVF and embryo transfer technique.

UNIT V:

Applications:

Applications of transgenic plants in Indian agriculture- Bt Cotton, FlavrSavr Tomato, Golden Rice, Ornamental plants, Virus resistant plants; Bio-fertilizers- bacteria ,fungi ,algae , azolla.

Application of transgenic animals – Goat, Fish, Pig, Cow, Mosquito; Concept of Gene therapy.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

Practical Paper VII – A

Practicals–Plant and Animal Tissue culture .

1. Establishing a plant cell culture (both in solid and liquid media).
2. Suspension culture.
3. Callus induction.
4. Regeneration from Callus cells.
5. Cell count by Hemocytometer.
6. Measurement of cell size.
7. Animal tissue culture–Maintenance of established cell line.
8. Microphotography.
9. IMVIC test.
10. Determination of seed viability.
11. Animal culture media preparation.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER-VI Cluster Electives Cluster Elective -A

Paper VIII-A-1 Plant Biotechnology

UNIT I:

Plant Tissue culture – Historic perspective, Components of tissue culture medium- Organic Compounds, Inorganic nutrients, Growth hormones, Gelling agents; Stock solutions, Preparation of MS medium ; Physio-chemical conditions for propagation of plant cells and tissues; Cellular totipotency.

UNIT II:

Invitro Productions: Organ culture – Ovary , ovule , anther, and endosperm culture and their applications; Somatic embryogenesis ; Artificial seeds; Cybridization ; Invitro production of secondary metabolites – techniques and significance.

UNIT III:

Culture Techniques: Isolation of genes – Genomic and c DNA libraries; Gene construct ; Prokaryotic and Eukaryotic vectors; Gene transfer methods – Electroporation, Lipofection, Gene gun method and Agrobacterium mediated gene transfer ; Selection of transgenics – marker and reporter genes.

UNIT IV:

Plant Biotechnology in Agriculture: Role of plant tissue culture in Indian Agriculture – Herbicide resistant, Pest resistant, Stress resistant, Pathogen free plant setc. Transgenic crops with improved quality traits – Flavrsavr tomatoes, Golden rice, Quality oil , Edible vaccines

UNIT V:

Environmental and Industrial applications: Role of transgenic plants in degradation of pollutants- Phytoremediation- Phyto extraction, Phyto transformation, Phyto stabilization, Phyto stimulation.

Production of therapeutic products- Plantibodies, Vaccines, Somatotropin, Humilin.

Production of Industrial products – Enzymes (trypsin, cellulase, amylase) and Bioplastics.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER–VI–ClusterElectives-A

Practical Paper VIII – A-1

Plant Biotechnology

1. Plant Tissue culture media preparation (MSmedia).
2. Single Cellisolation.
3. CallusInduction.
4. ProtoplastIsolation.
5. VAMstaining.
6. Synthetic seedproduction.
7. Antherculture.
8. Endospermculture.
9. Micropropagation.

10. Study of Genetic Engineering techniques from photographs(Bt Cotton, Golden rice, Flavrsavrtomatoes).

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER – VI Cluster Electives

Cluster Elective – A

Paper VIII – A-2

BTT: 501 - A-2 - Animal Tissue Culture.

UNIT I:

Introduction: Scope of Animal tissue culture, Culture media (Natural – Biological fluids, Tissue extract, embryo extract, Importance of serum in media, Chemical defined Media). Types of Cultures (Primary, Secondary or established Cultures) Animal cell line establishment (HAT selection).

UNIT II:

Culture Techniques: Transplantation of cultural cells, Expression of cloned protein in animal cell - Expression vectors, over production and down stream processing of expressed proteins. Production of Vaccine in animal cells, Production and applications of Monoclonal Antibodies, Transgenic animals, techniques & applications of transgenic sheep and mice.

UNIT III:

Based Biology of Stem cells: Stem cells – Introduction, Hematopoietic differentiation pathway, Potency and Plasticity of stem cells, sources, ESC, HSC, Mesenchymal stem cells, Stem cell markers, FACS analysis, Differentiation, Types and Source of stem cells – Embryonic, adult, Hematopoietic, fetal, cord blood, placenta, bone marrow, liver, neuronal, Primordial germ cells, Cancer Stem cells, induced to Pluripotent Stem cells.

UNIT IV:

Therapy for Animal Diseases: Recombinant cytokines and their use in the treatment of Animal infections, gene therapy for animal diseases, IVF and embryo transfer, Stem cell Therapy.

UNIT V:

Clinical applications and Tissue Engineering: Invitro Organogenesis, Molecular therapy, Gene therapy for diabetes, heart disease, Neurodegenerative diseases, Spinal cord injury; Tissue types, components & Basics of Tissue Engineering. Tissue repair and production of Tissue engineered Products.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER – VI - Cluster Electives

Practical Paper VIII – A-2-2

BTP: 502 -2- A-2-2- Animal Tissue culture

1. Animal Tissue culture – virus cultivation.
2. Estimation of Hemoglobin by Wong's method.
3. Establishing primary cell culture of Chicken embryo fibroblast.
4. Embryo transfer technique Blastocyst culture.
5. Separation of serum from blood and precipitation of Immunoglobulin.
6. Immuno-electrophoresis of serum or any biological sample.
7. Isolation of liver Parenchyma cells.
8. Cryopreservation – Principles.
9. Sperm count and Sperm motility in rat.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER – VI Cluster Electives

Cluster Elective – A

Paper VIII – A-3

BTT: 501 A-3 – Biosafety, Bioethics, IPR, Genetic counseling.

UNIT I:

Biosafety: Definition, historic evolution, Codes and guidelines, Universal Principles, Role of Institutional Biosafety committee. Review committee on genetic manipulations. Biosafety assessment for biotech foods and related products. LMO, GMO – Definitions; Assessment of pharmaceutical products like drugs / Vaccines etc.

UNIT II:

Bioethics: Bioethics – Introduction, Principles, Theories [Utilitarianism and deontology], Informed consent, Patient autonomy, Patient confidentiality, Paternalism and liberty; Applications of bioethical principles – Euthanasia, Abortion, determination of death biologically, IVF, stem cell technology; health ethics, Professional ethics.

UNIT III:

IPR: Importance of IPR, advantages of IP protection, relationship with trade, product / design patent. Types of IPR's, copyrights, trademarks, Trade secrets, Patents and Geographical indicators, Patents filing, Indian Patent Law, Worldwide Patent Protection.

UNIT IV:

Protection of Plant varieties: Plant varieties protection – Objectives, justification, international position, Plant varieties protection in India. Rights of farmers, breeders and Researchers. National gene bank, benefit sharing, Protection of Plant varieties.

UNIT V:

Genetic counseling: Introduction, definition of genetic counseling, Counseling regarding various prenatal diagnosis techniques, foetal counseling (amniocentesis, Cordocentesis), dysmorphology, learning common syndromes.

PRACTICALS

BTP: 502 A-3- Biosafety, Bioethics, IPR, Genetic counseling.

Project work –

1. Case studies in :

- a) Euthanasia b) Death & Dignity.
- c) A defense of Abortion. d) Ethical dilemma's.
- e) IVF f) Stem cell Cultures g) Clinical Death.
- h) Biopiracy cases (Neem patents)
- i) Prenatal diagnosis of genetic disorders.
- j) Pedigree analysis in disease conditions, risk calculations.

Biochemistry

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BIOCHEMISTRY SYLLABUS FOR VI SEMESTER BIOCHEMISTRY - PAPER VII-A MICROBIOLOGY AND MOLECULAR BIOLOGY

Periods: 60

Max. Marks: 100

Unit- I: Microbiology

- 1.1 Introduction to brief history of microbiology. Classification of microorganisms-- prokaryotic and eukaryotic microorganisms.
- 1.2 Isolation and cultivation of bacteria. Selective media and enriched media.
- 1.3 Bacterial growth curve and kinetics of growth. Gram's staining- Gram positive and Gram negative bacteria, motility and sporulation.
- 1.4 Structure and composition of viruses. Isolation and cultivation of bacterial plaques.
- 1.5 Lytic and lysogenic life cycle of λ phage.
- 1.6 Retro viruses- HIV.

UNIT- II: DNA Replication and Transcription

- 2.1 Nature and structure of the gene.
- 2.2 DNA replication- models of replication, Meselson-Stahl's experimental proof for semi-conservative model.
- 2.3 DNA polymerases I, II and III of E.coli, helicase, topoisomerases, primase, ligase.
- 2.4 Bidirectional replication model. Okazaki fragments, leading and lagging strands of DNA synthesis.
- 2.5 Inhibitors of DNA replication.
- 2.6 Transcription - RNA synthesis, RNA polymerases of prokaryotes. Promoters, Initiation-sigma factors and their recognition sites. Elongation- role of core enzyme Termination- rho dependent and rho-independent.

Unit- III Protein Synthesis and Regulation of Gene Expression

- 3.1 Introduction to protein synthesis- Genetic code, deciphering of genetic code
- 3.2 Nirenberg's and Khorana's experiments
- 3.3 wobble hypothesis, degeneracy of genetic code.
- 3.4 Protein synthesis- activation of amino acids (aminoacyl t-RNA synthetases).
- 3.5 Ribosome structure. Initiation, elongation and termination of protein synthesis.
- 3.6 Post- translational modifications-
- 3.7 signal hypothesis.
- 3.8 Inhibitors of protein synthesis.
- 3.9 Regulation of prokaryotic gene expression- induction and repression. Lac operon.

Unit-IV: Recombinant DNA Technology

- 4.1 Outlines of cloning strategies.
- 4.2 DNA sequencing- Maxam Gilbert and Sanger's methods.
- 4.3 Tools of r-DNA technology: Enzymes- Restriction endonucleases, ligase, phosphatases, reverse transcriptase, polynucleotide kinases, terminal transferases nucleases-S1 and RNAase H. Restriction mapping.
- 4.4 Cloning vectors- Plasmid, Expression vector - Host- E.coli.
- 4.5 Construction of C-DNA and Genomic libraries. Isolation and sequencing of cloned genes- Colony hybridization, Nucleic acid hybridization.
- 4.6 Polymerase chain reaction- principle and applications.
- 4.7 Outlines of blotting techniques-Southern, Northern and Western.
- 4.8 Applications of gene cloning- production of insulin and human growth hormone, production of Bt cotton and edible vaccines.

Unit V --Applied Biochemistry

- 5.1 Fermentation Technology: Batch, continuous culture techniques,
- 5.2 Principle types of fermentors. Industrial production of chemicals- alcohol, acids (citric acid), solvents (acetone), antibiotics (penicillin),
- 5.3 Enzyme Technology: Immobilization of enzymes and cells, different methods. Industrial applications.
- 5.4 Production of Transgenic plants and their applications.
- 5.5 Introduction to Bioinformatics- definitions of proteomics and genomics. Gene bank, NCBI, DDBJ, Swissprot, PDB. Sequence alignments- BLAST and FASTA.

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BIOCHEMISTRY PRACTICAL SYLLABUS FOR VI SEMESTER
BIOCHEMISTRY - PAPER – VII-A
MICROBIOLOGY AND MOLECULAR BIOLOGY

Periods: 24Max. Marks: 50 List of Experiments:

1. Preparation of culture media and sterilization methods.
2. Isolation of pure cultures: (i) Streak plate method. (ii) Serial dilution method.
3. Gram staining.
4. Motility of bacteria by hanging drop method.
5. Antibiotic sensitivity by paper disc method.
6. Isolation of DNA from onion/liver/coconut endosperm.
7. Estimation of DNA by diphenylamine method.
8. Estimation of RNA by orcinol method..
9. Sequence alignments of insulin/BSA with other proteins using BLAST and FASTA.
10. Examination of milk quality by MBRT method.

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BIOCHEMISTRY SYLLABUS FOR VI SEMESTER

Biochemistry Cluster Elective Paper: VIII-A-1 HAEMATOLOGY

Hours 60

Marks 100

Unit – I: Laboratory Preparation in Haematology:

Introduction to practical, Basic requirements. Collection of blood. Anticoagulants and effects of anticoagulants on blood cell morphology. Effects of storage of blood.

Unit – II: Routine Haematology:

Composition of blood. Haemoglobin synthesis. Various haemoglobins. Haemopoietic system of the body. Blood cell counts. Erythropoiesis. Leucopoiesis and development of blood corpuscles. Thrombopoiesis. Laboratory technique of haemocytometry. Clinical significance of Total erythrocyte count, total leucocyte count, differential count, erythrocyte sedimentation rate and platelet count.

Unit – III: Haemostasis and Haematological Diseases:

General consideration of blood coagulation. Mechanism of coagulation. Clinical significance of routine coagulation tests. Anaemia, Various types of anaemias – Iron deficiency anaemia, Aplastic anaemia, Pernicious anaemia, Sideroblastic anaemia and Sickle cell anaemia, Other haematological diseases – HDNB, Thalassaemia, Leukaemia.

Unit- IV: Automation in Haematology:

General considerations. Blood cell counters, Flow through cytochemical differential counter. Automated coagulated systems

Unit - V: Immunohaematology and Blood banking:

Human blood Group systems. Inheritance of blood group systems. Blood transfusion.

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BIOCHEMISTRY SYLLABUS FOR VI SEMESTER

Biochemistry Cluster Elective Paper: VIII-A-2 CLINICAL MICROBIOLOGY

Hours 60

Marks 100

Unit – I: Introduction to Clinical Microbiology:

Introduction to microbiology. Introduction to bacteriology. Classification of bacteria. Basic features of bacteria. Factors influencing the growth of bacteria. Morphology of bacteria. Pathogenic microorganisms.

Unit – II: Clinical Bacteriology Laboratory & Staining methods:

Requirements of a microbiological lab -safe disposal strategies. Safety practices to be followed in a microbiological laboratory. Sterilization and disinfection. Sterilization principles - autoclaving. Requirements in a microbiological lab. Microscopy. Automation in Bacteriology. Introduction to Staining. Gram Staining. Acid-Fast Staining. Capsule Staining. Transfer of bacteria.

Unit – III: Culturing of Microorganisms and Identification of Bacteria:

Composition of culture media. Different types of culture media. Preparation of culture media. Inoculation of culture media. Culturing of anaerobes and different types of culture media used. Identification of bacteria – staining reactions, cultural characteristics and biochemical properties. Study of Gram Negative Bacteria – Bacilli and Cocci. Study of Gram Positive Bacteria – Gram positive Cocci, Anaerobic bacteria, study of genus – Bacillus and Corynebacterium. Study of Mycobacteria, Spirochetes and Rickettsia.

Unit- IV: Clinical Mycology and Virology:

Basic morphological classification of clinically important fungi. Parasitic fungi – Superficial Mycoses and Dermatophytes, Subcutaneous Mycoses, Intermediate Superficial Deep Mycoses and Deep or Systemic mycoses. Some important viruses and related diseases Measles viruses, Influenza viruses, Rotaviruses, Polioviruses. Hepatitis viruses.

Unit - V: Diagnostic Serology:

General view of immune system. Antibodies. Harmful effect of immunity. Autoimmune diseases. Principles of Serodiagnostic tests - Flocculation test, Agglutination test, Slide agglutination test, Tube agglutination test, Complement test, Micro titration test, Precipitin test and ELISA

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BIOCHEMISTRY SYLLABUS FOR VI SEMESTER
Biochemistry Cluster Elective Paper: VIII-A-3
BIOCHEMICAL CORRELATIONS IN DISEASES

Hours 60

Marks 100

Unit- I: Inborn errors of metabolism

Alkaptonuria, Phenylketonuria, Glycogen and Lipid storage diseases, SCID, Diseases caused due to misfolded proteins: Alzheimer's, Huntington's disease, Kuru, Creutzfeldt-Jakob disease.

Unit- II: Nutritional Deficiency and Life style diseases

Kwashiorkar, Marasmus. Beri-beri, Scurvy, Pellagra. Night blindness. Rickets, Osteomalacia, Osteoporosis. Wilson's disease. Obesity. Cardiovascular diseases, Atherosclerosis, Diabetes mellitus-II. Inflammatory Bowel Disease (IBD).

Unit- III: Hormonal Imbalances and Autoimmune diseases

Outline of hormone action and imbalances leading to disease - precocious puberty, hyper and hypopituitarism. Hyper and hypothyroidism. Concepts in immune recognition - self and non self- discrimination, organ specific autoimmune diseases – Hashimoto's thyroiditis, Grave's disease, myasthenia gravis; Systemic diseases - SLE, rheumatoid arthritis; Diabetes Mellitus-I.

Unit- IV: Classification of infectious agents

Bacteria, Viruses, protozoa and fungi. Source, reservoir and transmission of pathogens, Antigenic shift and antigenic drift. Host parasite relationship, types of infections associated with parasitic organisms. Overview of viral and bacterial pathogenesis. Infection and evasion.

Unit- V: Infectious diseases

Viral infection (polio, measles, mumps, influenza, HIV) . Bacterial infections (tetanus, diphtheria, tuberculosis, typhoid, cholera). Protozoan (Plasmodium and Trypanosoma) and parasitic infections. Vaccines against diseases. General strategies in the design and development of vaccines.

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CLUSTER ELECTIVE –VIII-A: VI SEMESTER PRACTICAL
MEDICAL DIAGNOSTICS
PRACTICAL – 1 HAEMATOLOGY

1. Collection of blood specimen and serum preparation.
2. Blood glucose and urine glucose estimation.
3. Determination of serum proteins, SGOT, SGPT, S.ALP, S.ACP
4. Determination of sodium, potassium and chlorides
5. Routine haematological tests – Blood smear preparation, TC, DC, ESR, Platelet count.
6. Determination of Haemoglobin.
7. Determination of PCV.
8. Determination of bleeding time.
9. Determination of blood clotting time.
10. Blood Grouping.

PRACTICAL – 2 CLINICAL MICROBIOLOGY

1. Preparation of nutrient agar, culture plates and isolation of bacteria on nutrient agar plate.
2. Study of permanent slides of Candida albicans, Enterobactersps, Pseudomonas, Salmonella sps, Shigellasps, Staphylococcusaureus, Streptococcus pyogenes and Vibrio cholera.
3. Staining methods – Albert's and Gram's staining methods.
4. Hepatitis test and Pregnancy test using ELISA
5. VDRL qualitative and quantitative test.
6. WIDAL slide agglutination and tube agglutination test.

PRACTICAL - III: BIOCHEMICAL CORRELATIONS IN DISEASES

1. Glucose tolerance test.
2. Lipid profile: triglycerides and total cholesterol.
3. Obesity parameters.
4. RBC counting and haemoglobin estimation.
5. Blood pressure measurements.
6. Bone density measurements (visit to a nearby clinic).
7. T4 /TSH assays.
8. Tridot Test/ Lateral flow test for viral diseases

Mathematics

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

FIFTH SEMESTER (w.e.f. 2017-18)

CORE COURSE-V: RING THEORY & VECTOR CALCULUS

UNIT – 1 (12 hrs) RINGS-I : -

Definition of Ring and basic properties, Boolean Rings, divisors of zero and cancellation laws Rings, Integral Domains, Division Ring and Fields, The characteristic of a ring - The characteristic of an Integral Domain, The characteristic of a Field. Sub Rings, Ideals

UNIT – 2 (12 hrs) RINGS-II : -

Definition of Homomorphism – Homomorphic Image – Elementary Properties of Homomorphism – Kernel of a Homomorphism – Fundamental theorem of Homomorphism – Maximal Ideals – Prime Ideals.

UNIT –3 (12 hrs) VECTOR DIFFERENTIATION : -

Vector Differentiation, Ordinary derivatives of vectors, Differentiability, Gradient, Divergence, Curl operators, Formulae Involving these operators.

UNIT – 4 (12 hrs) VECTOR INTEGRATION : -

Line Integral, Surface Integral, Volume integral with examples.

UNIT – 5 (12 hrs) VECTOR INTEGRATION APPLICATIONS : -

Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems.

Prescribed Text Book: A Text book of B.Sc Mathematics, Volume-III, S.Chand & Company Pvt. Ltd., New Delhi, 2012 Edition.

Reference Books :-

1. Abstract Algebra by J. Fraleigh, Published by Narosa Publishing house.
2. Vector Calculus by Santhi Narayana, Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. A text Book of B.Sc., Mathematics by B.V.S.S.Sarma and others, published by S. Chand & Company Pvt. Ltd., New Delhi.
4. Vector Calculus by R. Gupta, Published by Laxmi Publications.
5. Vector Calculus by P.C. Matthews, Published by Springer Verlag publications.
6. Rings and Linear Algebra by Pundir & Pundir, Published by Pragathi Prakashan.

Suggested Activities:

Seminar/ Quiz/ Assignments/ Project on Ring theory and its applications

ANNEXURE - II

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

FIFTH SEMESTER (w.e.f. 2017-18)

CORE COURSE-VI: LINEAR ALGEBRA

UNIT – I (12 hrs) : Vector Spaces-I :

Vector Spaces, General properties of vector spaces, n-dimensional Vectors, addition and scalar multiplication of Vectors, internal and external composition, Null space, Vector subspaces, Algebra of subspaces, Linear Sum of two subspaces, linear combination of Vectors, Linear span Linear independence and Linear dependence of Vectors.

UNIT –II (12 hrs) : Vector Spaces-II :

Basis of Vector space, Finite dimensional Vector spaces, basis extension, co-ordinates, Dimension of a Vector space, Dimension of a subspace, Quotient space and Dimension of Quotientspace.

UNIT –III (12 hrs) : Linear Transformations :

Linear transformations, linear operators, Properties of L.T, sum and product of LTs, Algebra of Linear Operators, Range and null space of linear transformation, Rank and Nullity of linear transformations – Rank – Nullity Theorem.

UNIT –IV (12 hrs) : Matrix :

Singular and Non-Singular Transformations ,Inverse Linear Transformations(Sections 4.7 to 4.14), Characteristic Roots, Characteristic Values & Vectors of square Matrix, Cayley – Hamilton Theorem.

UNIT –V (12 hrs) : Inner product space :

Inner product spaces, Euclidean and unitary spaces, Norm or length of a Vector, Schwartz inequality, Triangle in Inequality, Parallelogram law, Orthogonality, Orthonormal set, complete orthonormal set, Gram – Schmidt orthogonalisation process. Bessel's inequality and Parseval's Identity.

Prescribed Text Book: A Text book of B.Sc Mathematics Volume-III, S.Chand & Company Pvt. Ltd., New Delhi, 2012 Edition.

Reference Books :

1. Linear Algebra by J.N. Sharma and A.R. Vasista, published by Krishna Prakashan Mandir, Meerut- 250002.
2. Matrices by Shanti Narayana, published by S.Chand Publications.
3. Linear Algebra by Kenneth Hoffman and Ray Kunze, published by Pearson Education (low priced edition), New Delhi.

4. Linear Algebra by Stephen H. Friedberg et al published by Prentice Hall of India Pvt. Ltd. 4th Edition 2007.

Suggested Activities:

Seminar/ Quiz/ Assignments/ Project on “Applications of Linear algebra Through Computer Sciences”

ANNEXURE - III

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

SIXTH SEMESTER (w.e.f. 2017-18)

ELECTIVE -VII-(A): LAPLACE TRANSFORMS

UNIT – 1 (12 hrs) Laplace Transform I : -

Definition of - Integral Transform – Laplace Transform Linearity, Property, Piecewise continuous Functions, Existence of Laplace Transform, Functions of Exponential order, and of Class A.

UNIT – 2 (12 hrs) Laplace Transform II : -

First Shifting Theorem, Second Shifting Theorem, Change of Scale Property, Laplace Transform of the derivative of $f(t)$, Initial Value theorem and Final Value theorem.

UNIT – 3 (12 hrs) Laplace Transform III : -

Laplace Transform of Integrals – Multiplication by t , Multiplication by t^n – Division by t . Laplace transform of Bessel Function, Laplace Transform of Error Function, Laplace Transform of Sine and cosine integrals.

UNIT –4 (12 hrs) Inverse Laplace Transform I : -

Definition of Inverse Laplace Transform. Linearity, Property, First Shifting Theorem, Second Shifting Theorem, Change of Scale property, use of partial fractions, Examples.

UNIT –5 (12 hrs) Inverse Laplace Transform II : -

Inverse Laplace transforms of Derivatives–Inverse Laplace Transforms of Integrals – Multiplication by Powers of 'P'– Division by powers of 'P'– Convolution Definition – Convolution Theorem – proof and Applications – Heaviside's Expansion theorem and its Applications.

Reference Books :-

1. Laplace Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Co., Pvt. Ltd., New Delhi.
3. Laplace and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.
4. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S. Chand and Co., Pvt.Ltd., New Delhi.

Suggested Activities:

Seminar/ Quiz/ Assignments

ANNEXURE - IV

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

SIXTH SEMESTER (w.e.f. 2017-2018)

ELECTIVE -VII-(B): NUMERICAL ANALYSIS

UNIT- I: (10 hours)

Errors in Numerical computations : Errors and their Accuracy, Mathematical Preliminaries, Errors and their Analysis, Absolute, Relative and Percentage Errors, A general error formula, Error in a series approximation.

UNIT – II: (12 hours)

Solution of Algebraic and Transcendental Equations: The bisection method, The iteration method, The method of false position, Newton Raphson method, Generalized Newton Raphson method. Muller's Method

UNIT – III: (12 hours) Interpolation - I

Interpolation : Errors in polynomial interpolation, Finite Differences, Forward differences, Backward differences, Central Differences, Symbolic relations, Detection of errors by use of Differences Tables, Differences of a polynomial

UNIT – IV: (12 hours) Interpolation - II

Newton's formulae for interpolation. Central Difference Interpolation Formulae, Gauss's central difference formulae, Stirling's central difference formula, Bessel's Formula, Everett's Formula.

UNIT – V : (14 hours) Interpolation - III

Interpolation with unevenly spaced points, Lagrange's formula, Error in Lagrange's formula, Divided differences and their properties, Relation between divided differences and forward differences, Relation between divided differences and backward differences Relation between divided differences and central differences, Newton's general interpolation Formula, Inverse interpolation.

Prescribed Text Book:

Reference Books :

1. Numerical Analysis by S.S.Sastry, published by Prentice Hall of India Pvt. Ltd., New Delhi. (Latest Edition)
2. Numerical Analysis by G. Sankar Rao published by New Age International Publishers, New – Hyderabad.
3. Finite Differences and Numerical Analysis by H.C Saxena published by S. Chand and Company, Pvt. Ltd., New Delhi.
4. Numerical methods for scientific and engineering computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.

ANNEXURE - V

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

SIXTH SEMESTER (w.e.f. 2017-18)

ELECTIVE -VII-(C): NUMBER THEORY

UNIT-I (12 hours)

Divisibility – Greatest Common Divisor – Euclidean Algorithm – The Fundamental Theorem of Arithmetic

UNIT-II (12 hours)

Congruences – Special Divisibility Tests - Chinese Remainder Theorem- Fermat's Little Theorem – Wilson's Theorem – Residue Classes and Reduced Residue Classes – Solutions of Congruences

UNIT-III (12 hours)

Number Theory from an Algebraic Viewpoint – Multiplicative Groups, Rings and Fields

UNIT-IV (12 hours)

Quadratic Residues - Quadratic Reciprocity – The Jacobi Symbol

UNIT-V (12 hours)

Greatest Integer Function – Arithmetic Functions – The Moebius Inversion Formula

Reference Books:

1. "Introduction to the Theory of Numbers" by Niven, Zuckerman & Montgomery (John Wiley & Sons)
2. "Elementary Number Theory" by David M. Burton.
3. Elementary Number Theory, by David, M. Burton published by 2nd Edition (UBS Publishers).
4. Introduction to Theory of Numbers, by Davenport H., Higher Arithmetic published by 5th Edition (John Wiley & Sons) Niven, Zuckerman & Montgomery. (Camb, Univ, Press)
5. Number Theory by Hardy & Wright published by Oxford Univ, Press.
6. Elements of the Theory of Numbers by Dence, J. B & Dence T.P published by Academic Press.

ANNEXURE - VI

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

SIXTH SEMESTER (w.e.f. 2017-18)

CLUSTER ELECTIVE-VIII-A-1: INTEGRAL TRANSFORMS

UNIT – 1 (12 hrs) Application of Laplace Transform to solutions of Differential Equations

:-

Solutions of ordinary Differential Equations.

Solutions of Differential Equations with constants co-efficient

Solutions of Differential Equations with Variable co-efficient

UNIT – 2 (12 hrs) Application of Laplace Transform :-

Solution of simultaneous ordinary Differential Equations.

Solutions of partial Differential Equations.

UNIT – 3 (12 hrs) Application of Laplace Transforms to Integral Equations :-

Definitions : Integral Equations-Abel's, Integral Equation-Integral Equation of Convolution Type, Integro Differential Equations. Application of L.T. to Integral Equations.

UNIT –4 (12 hrs) Fourier Transforms-I :-

Definition of Fourier Transform – Fourier's in Transform – Fourier cosine Transform – Linear Property of Fourier Transform – Change of Scale Property for Fourier Transform – sine Transform and cosine transform shifting property – modulation theorem.

UNIT – 5 (12 hrs) Fourier Transform-II :-

Convolution Definition – Convolution Theorem for Fourier transform – parseval's Identify – Relationship between Fourier and Laplace transforms – problems related to Integral Equations.

Finte Fourier Transforms :-

Finte Fourier Sine Transform – Finte Fourier Cosine Transform – Inversion formula for sine and cosine Transforms only statement and related problems.

Prescribed Text Book: Integral Transforms, S.Chand & Company Pvt.Ltd., New Delhi.

Reference Books :-

1. Integral Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. A Course of Mathematical Analysis by Shanthi Narayana and P.K. Mittal, Published by S. Chand and Company pvt. Ltd., New Delhi.
3. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Company Pvt. Ltd., New Delhi.
4. Lapalce and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.
5. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S.Chand and Company pvt. Ltd., New Delhi.

Suggested Activities:

Seminar/ Quiz/ Assignments

ANNEXURE - VII

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

FINAL YEAR B.Sc. MATHEMATICS

SIXTH SEMESTER (w.e.f. 2017-18)

CLUSTER ELECTIVE-VIII-A-2: ADVANCED NUMERICAL ANALYSIS

Unit – I (10 Hours)

Curve Fitting: Least – Squares curve fitting procedures, fitting a straight line, nonlinear curve fitting, Curve fitting by a sum of exponentials.

UNIT- II : (12 hours)

Numerical Differentiation: Derivatives using Newton's forward difference formula, Newton's backward difference formula, Derivatives using central difference formula, Stirling's interpolation formula, Newton's divided difference formula, Maximum and minimum values of a tabulated function.

UNIT- III : (12 hours)

Numerical Integration: General quadrature formula on errors, Trapezoidal rule, Simpson's 1/3 – rule, Simpson's 3/8 – rule, and Weddle's rules, Euler – Maclaurin Formula of summation and quadrature, The Euler transformation.

UNIT – IV: (14 hours)

Solutions of simultaneous Linear Systems of Equations: Solution of linear systems – Direct methods, Matrix inversion method, Gaussian elimination methods, Gauss-Jordan Method, Method of factorization, Solution of Tridiagonal Systems, Iterative methods. Jacobi's method, Gauss-Seidel method.

UNIT – V (12 Hours)

Numerical solution of ordinary differential equations: Introduction, Solution by Taylor's Series, Picard's method of successive approximations, Euler's method, Modified Euler's method, Runge – Kutta methods.

Prescribed Text Book: Advanced Numerical Analysis, S.Chand & Company Pvt.Ltd., New Delhi

Reference Books :

1. Numerical Analysis by S.S.Sastry, published by Prentice Hall India (Latest Edition).
2. Numerical Analysis by G. Sankar Rao, published by New Age International Publishers, Hyderabad.
3. Finite Differences and Numerical Analysis by H.C Saxena published by S. Chand and Company, Pvt. Ltd., New Delhi.

4. Numerical methods for scientific and engineering computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.

Suggested Activities:

Seminar/ Quiz/ Assignments

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
FINAL YEAR B.Sc. MATHEMATICS
SIXTH SEMESTER (w.e.f. 2017-18)
CLUSTER ELECTIVE-VIII-B-1: PRINCIPLES OF MECHANICS

Unit – I : (10 hours)

D'Alembert's Principle and Lagrange's Equations : some definitions – Lagrange's equations for a Holonomic system – Lagrange's Equations of motion for conservative, nonholonomic system.

Unit – II: (10 hours)

Variational Principle and Lagrange's Equations: Variational Principle – Hamilton's Principle – Derivation of Hamilton's Principle from Lagrange's Equations – Derivation of Lagrange's Equations from Hamilton's Principle – Extension of Hamilton's Principle – Hamilton's Principle for Non-conservative, Non-holonomic system – Generalised Force in Dynamic System – Hamilton's Principle for Conservative, Non-holonomic system – Lagrange's Equations for Non-conservative, Holonomic system - Cyclic or Ignorable Coordinates.

Unit –III: (15 hours)

Conservation Theorem, Conservation of Linear Momentum in Lagrangian Formulation – Conservation of angular Momentum – conservation of Energy in Lagrangian formulation.

Unit – IV: (15 hours)

Hamilton's Equations of Motion: Derivation of Hamilton's Equations of motion – Routh's procedure – equations of motion – Derivation of Hamilton's equations from Hamilton's Principle – Principle of Least Action – Distinction between Hamilton's Principle and Principle of Least Action.

Unit – V: (10 hours)

Canonical Transformation: Canonical coordinates and canonical transformations – The necessary and sufficient condition for a transformation to be canonical – examples of canonical transformations – properties of canonical transformation – Lagrange's bracket is canonical invariant – poisson's bracket is canonical invariant - poisson's bracket is invariant under canonical transformation – Hamilton's Equations of motion in poisson's bracket – Jacobi's identity for poisson's brackets.

Reference Text Books :

1. Classical Mechanics by C.R.Mondal Published by Prentice Hall of India, New Delhi.
2. A Text Book of Fluid Dynamics by F. Charlton Published by CBS Publications, New Delhi.
3. Classical Mechanics by Herbert Goldstein, published by Narosa Publications, New Delhi.
4. Fluid Mechanics by T. Allen and I.L. Ditsworth Published by (McGraw Hill, 1972)
5. Fundamentals of Mechanics of fluids by I.G. Currie Published by (CRC, 2002)
6. Fluid Mechanics : An Introduction to the theory, by Chia-shun Yeh Published by (McGraw Hill, 1974)

ANNEXURE - IX
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
FINAL YEAR B.Sc. MATHEMATICS
SIXTH SEMESTER (w.e.f. 2017-18)
CLUSTER ELECTIVE-VIII-B-2: FLUID MECHANICS

Unit – I : (10 hours)

Kinematics of Fluids in Motion

Real fluids and Ideal fluids – Velocity of a Fluid at a point – Streamlines and pathlines – steady and Unsteady flows – the velocity potential – The Vorticity vector – Local and Particle Rates of Change – The equation of Continuity – Acceleration of a fluid – Conditions at a rigid boundary – General Analysis of fluid motion.

Unit – II : (10 hours)

Equations of motion of a fluid- Pressure at a point in fluid at rest – Pressure at a point in a moving fluid – Conditions at a boundary of two inviscid immiscible fluids – Euler's equations of motion – Bernoulli's equation – Worked examples.

Unit – III : (10 hours)

Discussion of the case of steady motion under conservative body forces - Some flows involving axial symmetry – Some special two-dimensional flows – Impulsive motion – Some further aspects of vortex motion.

Unit – IV : (15 hours)

Some Two – dimensional Flows, Meaning of two-dimensional flow – Use of Cylindrical polar coordinates – The stream function – The complex potential for two-dimensional, Irrotational, Incompressible flow – Uniform Stream – The Milne-Thomson Circle theorem – the theorem of Blasius.

Unit – V : (15 hours)

Viscous flow, Stress components in a real fluid – Relations between Cartesian components of stress – Translational motion of fluid element – The rate of strain quadric and principal stresses – Some further properties of the rate of strain quadric – Stress analysis in fluid motion – Relations between stress and rate of strain – the coefficient of viscosity and laminar flow - The Navier-Stokes equations of motion of a viscous fluid.

Reference Text Books :

1. A Text Book of Fluid Dynamics by F. Charlton Published by CBS Publications, New Delhi.
2. Classical Mechanics by Herbert Goldstein, published by Narosa Publications, New Delhi.
3. Fluid Mechanics by T. Allen and I.L. Ditsworth published by (McGraw Hill, 1972)
4. Fundamentals of Mechanics of fluids by I.G. Currie published by (CRC, 2002)

5. Fluid Mechanics, An Introduction to the theory by Chia-shun Yeh published by (McGraw Hill, 1974)
6. Fluids Mechanics by F.M White published by (McGraw Hill, 2003)
7. Introduction to Fluid Mechanics by R.W Fox, A.T Mc Donald and P.J. Pritchard published by (John Wiley and Sons Pvt. Ltd., 2003)

ANNEXURE - X
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
FINAL YEAR B.Sc. MATHEMATICS
SIXTH SEMESTER (w.e.f. 2017-18)
CLUSTER ELECTIVE-VIII-C-1: GRAPH THEORY

UNIT – I (12 hrs) Graphs and Sub Graphs :

Graphs , Simple graph, graph isomorphism, the incidence and adjacency matrices, sub graphs, vertex degree, Hand shaking theorem, paths and connection, cycles.

UNIT – II (12 hrs)

Applications, the shortest path problem, Sperner's lemma.

Trees :

Trees, cut edges and Bonds, cut vertices, Cayley's formula.

UNIT – III (12 hrs) :

Applications of Trees - the connector problem.

Connectivity

Connectivity, Blocks and Applications, construction of reliable communication Networks,

UNIT – IV (12 hrs):

Euler tours and Hamilton cycles

Euler tours, Euler Trail, Hamilton path, Hamilton cycles , dodecahedron graph, Petersen graph, hamiltonian graph, closure of a graph.

UNIT – V (12 hrs)

Applications of Eulerian graphs, the Chinese postman problem, Fleury's algorithm - the travelling salesman problem.

Reference Books :

1. Graph theory with Applications by J.A. Bondy and U.S.R. Murthy published by Mac. Millan Press
2. Introduction to Graph theory by S. Arumugham and S. Ramachandran, published by scitech Publications, Chennai-17.
3. A Text Book of Discrete Mathamatics by Dr. Swapan Kumar Sankar, published by S.Chand & Co. Publishers, New Delhi.
4. Graph theory and combinations by H.S. Govinda Rao published by Galgotia Publications.

ANNEXURE - XI
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
FINAL YEAR B.Sc. MATHEMATICS
SIXTH SEMESTER (w.e.f. 2017-18)
CLUSTER ELECTIVE-VIII-C-2: APPLIED GRAPH THEORY

UNIT – I (12 hrs) :

Matchings

Matchings – Alternating Path, Augmenting Path - Matchings and coverings in Bipartite graphs, Marriage Theorem, Minimum Coverings.

UNIT –II (12 hrs) :

Perfect matchings, Tutte's Theorem, Applications, The personal Assignment problem -The optimal Assignment problem, Kuhn-Munkres Theorem.

UNIT –III (12 hrs) :

Edge Colorings

Edge Chromatic Number, Edge Coloring in Bipartite Graphs - Vizing's theorem.

UNIT –IV (12 hrs) :

Applications of Matchings, The timetabling problem.

Independent sets and Cliques

Independent sets, Covering number , Edge Independence Number, Edge Covering Number - Ramsey's theorem.

UNIT –V (12 hrs) :

Determination of Ramsey's Numbers – Erdos Theorem, Turan's theorem and Applications, Sehur's theorem. A Geometry problem.

Reference Books :-

1. Graph theory with Applications by J.A. Bondy and U.S.R. Murthy, published by Mac. Millan Press.
2. Introduction to graph theory by S. Arumugham and S. Ramachandran published by SciTech publications, Chennai-17.
3. A text book of Discrete Mathematics by Dr. Swapan Kumar Sarkar, published by S. Chand Publishers.
4. Graph theory and combinations by H.S. Govinda Rao, published by Galgotia Publications.

Physics

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

III Year – V Semester B.Sc. (Physics)

**DSC – 2 Core Paper V: Electricity, Magnetism & Electronics (For Maths Combinations)
w.e.f – 2017-2018**

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Electric field intensity and potential:

Gauss's law statement and its proof- Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electrical potential – equipotential surfaces- potential due to i) a point charge, ii) **Dipole** and iii) circular disc

2. Dielectrics:

Electric dipole moment and molecular polarizability- Electric displacement D , electric polarization P – relation between D , E and P - Dielectric constant and susceptibility. Boundary conditions at the dielectric surface.

UNIT-II (12 hrs)

3. Electric and magnetic fields

Biot-Savart's law, explanation and calculation of B due to long straight wire, a circular current loop and solenoid – Lorentz force – Hall effect – determination of Hall coefficient and applications.

4. Electromagnetic induction

Faraday's law-Lenz's law- Self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer - energy losses - efficiency.

UNIT-III (12 hrs)

5. Alternating currents and electromagnetic waves

Alternating current – Ac through pure resistance , inductance, capacitance , LCR series and parallel resonant circuit, Q –factor, power in ac circuits.

6. Maxwell's equations

Idea of displacement current - Maxwell's equations (integral and differential forms) (no derivation), Maxwell's wave equation (with derivation), Transverse nature of electromagnetic waves. Poynting theorem (statement and proof), production of electromagnetic waves (Hertz experiment).

UNIT-IV (12 hrs)

7. Basic electronics:

Band theory of solids - PN junction diode, Zener diode, Tunnel diode, I-V characteristics, PNP and NPN transistors, CB, CE and CC configurations – Relation between α , β and γ - transistor (CE) characteristics -Determination of hybrid parameters, Transistor as an amplifier.

UNIT-V: (12 hrs)

8. Digital electronics

Number systems - Conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods). Laws of Boolean algebra - De Morgan's laws-statement and proof, Basic logic gates, NAND and NOR as universal gates, exclusive-OR gate, Half adder and Full adder, Parallel adder circuits.

REFERENCE BOOKS

1. BSc Physics, Vol.3, Telugu Akademy, Hyderabad.
2. Electricity and Magnetism, D.N. Vasudeva. S. Chand & Co.
3. Electricity, Magnetism with Electronics, K.K.Tewari, R.Chand & Co.,
4. Principles of Electronics, V.K. Mehta, S.Chand & Co.,
5. Digital Principles and Applications, A.P. Malvino and D.P. Leach, McGrawHill Edition.

Annexure – I(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – V Semester B.Sc.(Physics)
DSC – 2 Lab Practical V
w.e.f – 2017 -2018

Work load: 30 hrs

2 hrs/week

Minimum of 6 experiments to be done and recorded

1. Figure of merit of a moving coil galvanometer.
2. LCR circuit series/parallel resonance, Q factor.
3. Determination of ac-frequency –sonometer.
4. Verification of Kirchoff's laws and maximum power transfer theorem.
5. Field along the axis of a circular coil carrying current.
6. PN Junction Diode Characteristics.
7. Zener Diode Characteristics.
8. Transistor CE Characteristics- Determination of hybrid parameters.
9. Logic Gates- OR,AND,NOT and NAND gates. Verification of Truth Tables.
10. Verification of De Morgan's Theorems.

ANNEXURE - II
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – V Semester B.Sc. (Physics)
DSC – 2 Core Paper VI: Modern Physics (For Maths Combinations)
w.e.f – (2017-2018)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Atomic and molecular physics

Introduction –Drawbacks of Bohr's atomic model- Sommerfeld's elliptical orbits-relativistic correction (no derivation). Vector atom model and Stern-Gerlach experiment - quantum numbers associated with it. L-S and j- j coupling schemes. Zeeman effect and its experimental arrangement.

Raman effect, hypothesis, Stokes and Anti Stokes lines. Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.

UNIT-II (12 hrs)

2. Matter waves & Uncertainty Principle

Matter waves, de Broglie's hypothesis - wavelength of matter waves, Properties of matter waves - Davisson and Germer experiment – Phase and group velocities.

Heisenberg's uncertainty principle for position and momentum (x and p), & energy and time (E and t). Experimental verification - Complementarity principle of Bohr.

UNIT-III (12 hrs)

3. Quantum (wave) mechanics

Basic postulates of quantum mechanics-Schrodinger time independent and time dependent wave equations-derivations. Physical interpretation of wave function. Eigen functions, Eigen values. Application of Schrodinger wave equation to particle in one dimensional infinite box.

UNIT-IV(12 hrs)

4. General Properties of Nuclei

Basic ideas of nucleus -size, mass, charge density (matter energy), binding energy, angular momentum, magnetic moment, electric moments. Liquid drop model and Shell model (qualitative aspects only) - Magic numbers.

5. Radioactivity decay:

Alpha decay: basics of α -decay processes. Theory of α -decay, Gamow's theory, Geiger Nuttall law. β -decay, Energy kinematics for β -decay, positron emission, electron capture, neutrino hypothesis.

UNIT-V (12 hrs)

6. Crystal Structure

Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X-rays by crystals, Bragg's law, experimental techniques, Laue's method and powder diffraction method.

7. Superconductivity:

Introduction - experimental facts, critical temperature - critical field - Meissner effect – Isotope effect - Type I and type II superconductors - BCS theory (elementary ideas only) - applications of superconductors.

REFERENCE BOOKS

1. BSc Physics, Vol.4, Telugu Academy, Hyderabad
2. Molecular Structure and Spectroscopy by G. Aruldas. Prentice Hall of India, New Delhi.
3. Modern Physics by R. Murugesan and Kiruthiga Siva Prasath. S. Chand & Co.
4. Modern Physics by G. Aruldas & P. Rajagopal. Eastern Economy Edition.
5. Concepts of Modern Physics by Arthur Beiser. Tata McGraw-Hill Edition.
6. Quantum Mechanics, Mahesh C Jain, Eastern Economy Edition.
7. Nuclear Physics, Irving Kaplan, Narosa publishing House.
8. Nuclear Physics, D.C.Tayal, Himalaya Publishing House.
9. Elements of Solid State Physics, J.P.Srivastava, Prentice Hall of India Pvt., Ltd.
10. Solid State Physics, A.J. Dekker, McMillan India.

ANNEXURE – II(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – V Semester B.Sc.(Physics)
DSC – 2 Lab Practical VI
w.e.f – 2017 -2018

Work load: 30 hrs

2 hrs/week

Minimum of 6 experiments to be done and recorded

1. e/m of an electron by Thomson method.
2. Determination of Planck's Constant (photocell).
3. Verification of inverse square law of light using photovoltaic cell.
4. Study of absorption of α -rays.
5. Study of absorption of γ -rays.
6. Determination of Range of β -particles.
7. Determination of M & H.
8. Analysis of powder X-ray diffraction pattern to determine properties of crystals.
9. Energy gap of a semiconductor using junction diode.
10. Energy gap of a semiconductor using thermister.
11. Thevinin Norton Theorems/Construction of Ohm Meter
12. L-R & C-R Circuits
13. L & II Filters (Bridge Rectifier)
14. L-D-R Characteristics

Note: For all the above 8 practical papers the book "B.Sc Practical Physics" by C.L. Arora
Published by S.Chand & Co, New – Delhi may be followed.

ANNEXURE - III
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Elective Paper VII(C): Renewable Energy (For Maths Combinations)
w.e.f – 2017-2018

No. of Hours per week: 04

Total Lectures:60

UNIT-I (12 hrs)

1. Introduction to Energy: Definition and units of energy, power, Forms of energy, Conservation of energy, second law of thermodynamics, Energy flow diagram to the earth. Origin and time scale of fossil fuels, Conventional energy sources, Role of energy in economic development and social transformation.

2. Environmental Effects:Environmental degradation due to energy production and utilization, air and water pollution, depletion of ozone layer, global warming, biological damage due to environmental degradation. Effect of pollution due to thermal power station, nuclear power generation, hydroelectric power stations on ecology and environment.

UNIT-II (12 hrs)

3. Global Energy Scenario: Energy consumption in various sectors, projected energy consumption for the next century, exponential increase in energy consumption, energy resources, coal, oil, natural gas, nuclear and hydroelectric power, impact of exponential rise in energy usage on global economy.

4. Indian Energy Scene: Energy resources available in India, urban and rural energy consumption, energy consumption pattern and its variation as a function of time, nuclear energy - promise and future, energy as a factor limiting growth, need for use of new and renewable energy sources.

UNIT-III (12 hrs)

5.Solar energy: Solar energy, Spectral distribution of radiation, Flat plate collector, solar water heating system, Applications, Solar cooker. Solar cell, Types of solar cells, Solar module and array, Components of PV system, Applications of solar PV systems.

6. Wind Energy: Introduction, Principle of wind energy conversion, Components of wind turbines, Operation and characteristics of a wind turbine, Advantages and disadvantages of wind mills, Applications of wind energy.

UNIT-IV (12 hrs)

7. Ocean Energy: Introduction, Principle of ocean thermal energy conversion, Tidal power generation, Tidal energy technologies, Energy from waves, Wave energy conversion, Wave energy technologies, advantages and disadvantages.

8. Hydrogen Energy:History of hydrogen energy - Hydrogen production methods - Electrolysis of water, Hydrogen storage options – Compressed and liquefied gas tanks, Metal hydrides; Hydrogen safety - Problems of hydrogen transport and distribution - Uses of hydrogen as fuel.

UNIT-V (12 hrs)

9. Bio-Energy

Energy from biomass – Sources of biomass – Different species – Conversion of biomass into fuels – Energy through fermentation – Pyrolysis, gasification and combustion – Aerobic and anaerobic bio-conversion – Properties of biomass – Biogas plants – Types of plants – Design and operation – Properties and characteristics of biogas.

References:

1. Solar Energy Principles, Thermal Collection &Storage, S.P.Sukhatme: Tata McGraw Hill Pub., New Delhi.
 2. Non-Conventional Energy Sources, G.D.Rai, New Delhi.
 3. Renewable Energy, power for a sustainable future, Godfrey Boyle, 2004,
 4. The Generation of electricity by wind, E.W. Golding.
 5. Hydrogen and Fuel Cells: A comprehensive guide, Rebecca Busby, Pennwellcorporation (2005)
 6. Hydrogen and Fuel Cells: Emerging Technologies and Applications, B.Sorensen, Academic Press (2012).
 7. Non-Conventional Energy Resources by B.H. Khan, Tata McGraw Hill Pub., 2009.
 8. Fundamentals of Renewable Energy Resources byG.N.Tiwari, M.K.Ghosal, Narosa Pub., 2007.
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ANNEXURE –III(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Elective paper Lab Practical VII(C)
w. e. f – 2017 -2018

Experiments to be done and recorded 2hrs/Week

1. Preparation of copper oxide selective surface by chemical conversion method.
2. Performance testing of solar cooker.
3. Determination of solar constant using pyrliometer.
4. Measurement of I-V characteristics of solar cell.
5. Study the effect of input light intensity on the performance of solar cell.
6. Study the characteristics of wind.

ANNEXURE - IV
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Cluster Elective Paper VIII(C-1): Solar Thermal and Photovoltaic Aspects (For
Maths Combinations)
w.e.f – 2017-2018

No. of Hours per week: 04

Total Lectures: 60

UNIT-I (12 hrs)

1. Basics of Solar Radiation: Structure of Sun, Spectral distribution of extra terrestrial radiation, Solar constant, Concept of Zenith angle and air mass, Definition of declination, hour angle, solar and surface azimuth angles; Direct, diffuse and total solar radiation, Solar intensity measurement – Thermoelectric pyranometer and pyr heliometer.

2. Radiative Properties and Characteristics of Materials: Reflection, absorption and transmission of solar radiation through single and multi covers; Kirchoff's law – Relation between absorptance, emittance and reflectance; Selective Surfaces - preparation and characterization, Types and applications; Anti-reflective coating.

UNIT-II (14 hrs)

3. Flat Plate Collectors (FPC) : Description of flat plate collector, Liquid heating type FPC, Energy balance equation, Efficiency, Temperature distribution in FPC, Definitions of fin efficiency and collector efficiency, Evacuated tubular collectors.

4. Concentrating Collectors: Classification, design and performance parameters; Definitions of aperture, rim-angle, concentration ratio and acceptance angle; Tracking systems; Parabolic trough concentrators; Concentrators with point focus.

Unit-III (14 hrs)

5. Solar photovoltaic (PV) cell: Physics of solar cell –Type of interfaces, homo, hetero and schottky interfaces, Photovoltaic Effect, Equivalent circuit of solar cell, Solar cell output parameters, Series and shunt resistances and its effect on cell efficiency; Variation of efficiency with band-gap and temperature.

6. Solar cell fabrication: Production of single crystal Silicon: Czochralski (CZ) and Float Zone (FZ) methods, Silicon wafer fabrication, Wafer to cell formation, Thin film solar cells, Advantages, CdTe/CdS cell formation, Multi-junction solar cell; Basic concept of Dye-sensitized solar cell, Quantum dot solar cell.

UNIT-IV (8 hrs)

Solar PV systems: Solar cell module assembly – Steps involved in the fabrication of solar module, Module performance, I-V characteristics, Modules in series and parallel, Module protection – use of Bypass and Blocking diodes, Solar PV system and its components, PV array, inverter, battery and load.

UNIT-V (12 hrs)

Solar thermal applications: Solar hot water system (SHWS), Types of SHWS, Standard method of testing the efficiency of SHWS; Passive space heating and cooling concepts, Solar desalinator and drier, Solar thermal power generation.

Solar PV applications: SPV systems; Stand alone, hybrid and grid connected systems, System installation, operation and maintenances; Field experience; PV market analysis and economics of SPV systems.

Reference Books:

1. Solar Energy Utilization, G. D. Rai, Khanna Publishers
2. Solar Energy- Fundamentals, design, modeling and applications, G.N. Tiwari, Narosa Pub., 2005.
3. Solar Energy-Principles of thermal energy collection & storage, S.P. Sukhatme, Tata McGrawHill Publishers, 1999.
4. Solar Photovoltaics- Fundamentals, technologies and applications, Chetan Singh Solanki, PHI Learning Pvt. Ltd.,
5. Science and Technology of Photovoltaics, P. Jayarama Reddy, BS Publications, 2004.

ANNEXURE – IV(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc. (Physics)
DSC – 2 Cluster Elective paper Lab Practical VIII(C-1)
w.e.f – 2017 -2018

Experiments to be done and recorded.2hrs/Week

1. Measurement of direct solar radiation using pyrhelimeter.
2. Measurement of global and diffuse solar radiation using pyranometer.
3. Measurement of emissivity, reflectivity and transsivity.
4. Measurement of efficiency of solar flat plate collector.
5. Performance testing of solar air dryer unit.
6. Effect of tilt angle on the efficiency of solar photovoltaic panel.
7. Study on solar photovoltaic panel in series and parallel combination.

ANNEXURE - V
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Cluster Elective Paper VIII(C-2): Wind, Hydro & Ocean Energies (For Maths
Combinations)
w.e.f – 2017-2018

No. of Hours per week: 04

Total Lectures:60

UNIT-I

- 1. Introduction:** Wind generation, meteorology of wind, world distribution of wind, wind speed variation with height, wind speed statistics, Wind energy conversion principles; General introduction; Types and classification of WECS; Power, torque and speed characteristics.
- 2. Wind Measurements:** Eolian features, biological indicators, rotational anemometers, other anemometers, wind measurements with balloons.

UNIT-II

- 3. Wind Energy Conversion System:** Aerodynamic design principles; Aerodynamic theories; Axial momentum, blade element and combine theory; Rotor characteristics; Maximum power coefficient; Prandtl's tip loss correction.
- 4. Design of Wind Turbine:** Wind turbine design considerations; Methodology; Theoretical simulation of wind turbine characteristics; Test methods.

UNIT-III

- 5. Wind Energy Application:** Wind pumps: Performance analysis, design concept and testing; Principle of wind energy generation; Standalone, grid connected and hybrid applications of wind energy conversion systems, Economics of wind energy utilization; Wind energy in India; Environmental Impacts of Wind farms.

UNIT-IV

- 6. Small Hydropower Systems:** Overview of micro, mini and small hydro systems; Hydrology; Elements of pumps and turbine; Selection and design criteria of pumps and turbines; Site selection; Speed and voltage regulation; Investment issues load management and tariff collection; potential of small hydro power in India. Wind and hydro based stand-alone hybrid power systems.

UNIT-V

- 7. Ocean Thermal, Tidal and Wave Energy Systems:** Ocean Thermal - Introduction, Technology process, Working principle, Resource and site requirements, Location of OCET system, Electricity generation methods from OCET, Advantages and disadvantages, Applications of OTEC,
- 8. Tidal Energy** - Introduction, Origin and nature of tidal energy, Merits and limitations, Tidal energy technology, Tidal range power, Basic modes of operation of tidal systems. Wave Energy –

Introduction, Basics of wave motion, Power in waves, Wave energy conversion devices, Advantages and disadvantages, Applications of wave energy.

Reference Books:

1. Dan Charis, Mick Sagrillo, LanWoofenden, “Power from the Wind”, New Society Pub., 2009.
2. Erich Hau, “Wind Turbines-Fundamentals, Technologies, Applications, Economics”, 2ndEdition, Springer Verlag, BerlinHeidelberg, NY, 2006.
3. Joshue Earnest, Tore Wizelius, Wind Power and Project Developmen”, PHI Pub., 2011.
4. T. Burton, D. Sharpe, N. Jenkins, E. Bossanyi, Wind Energy Handbook, John Wiley Pub., 2001.
5. Paul Gipe, “Wind Energy Basics”, Chelsea Green Publications, 1999.
6. Khan, B.H., “Non-Conventional Energy Resources”, TMH, 2nd Edition, New Delhi, 2009.
7. Tiwari, G.N., and Ghosal, M.K, Renewable Energy Resources – Basic Principles and applications, Narosa Publishing House,2007.

ANNEXURE – V(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Cluster Elective paper Lab Practical VIII(C-2)
w.e.f – 2017 -2018

Experiments to be done and recorded

2hrs/Week

1. Estimation of wind speed using anemometer.
2. Determination of characteristics of a wind generator
3. Study the effect of number and size of blades of a wind turbine on electric power output.
4. Performance evaluation of vertical and horizontal axes wind turbine rotors.
5. Study the effect of density of water on the output power of hydroelectric generator.
6. Study the effect of wave amplitude and frequency on the wave energy generated.

ANNEXURE - VI
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Cluster Elective Paper VIII(C-3): Energy Storage Devices (For Maths
Combinations)

w.e.f – 2017-2018

No. of Hours per week:04

Total

Lectures:60

UNIT-I (12 hr)

1. Energy Storage:Need of energy storage; Different modes of energy storage, Flywheel storage, Electrical and magnetic energy storage: Capacitors,electromagnets; Chemical Energy storage: Thermo-chemical, photo-chemical, bio-chemical,electro-chemical, fossil fuels and synthetic fuels. Hydrogen for energy storage.

UNIT-II (12 hrs)

2. Electrochemical Energy Storage Systems:Batteries: Primary, Secondary, Lithium, Solid-state and molten solvent batteries; Leadacid batteries; Nickel Cadmium Batteries; Advanced Batteries. Role of carbon nano-tubes in electrodes.

UNIT-III (12 hrs)

3. Magnetic and Electric Energy Storage Systems:Superconducting Magnet Energy Storage(SMES) systems; Capacitor and battery:Comparison and application; Super capacitor: Electrochemical Double Layer Capacitor(EDLC), principle of working, structure, performance and application.

UNIT-IV (12 hrs)

4. Fuel Cell: Fuel cell definition, difference between batteries and fuel cells, fuel cell components, principle and working of fuel cell, performance characteristics,efficiency, fuel cell stack, fuel cell power plant: fuel processor, fuel cell powersection, power conditioner, Advantages and disadvantages.

UNIT-V (12 hrs)

5. Types of Fuel Cells: Alkaline fuel cell, polymer electrolyte fuel cell, phosphoric acid fuel cell,molten carbonate fuel cell; solid oxide fuel cell,proton exchange membrane fuel cell, problems with fuel cells, applications of fuel cells.

REFERENCE BOOKS

1. J. Jensen and B. Squirensen, Fundamentals of Energy Storage, John Wiley, NY, 1984.
2. M. Barak, Electrochemical Power Sources: Primary and Secondary Batteries by, P. Peregrinus,IEE,1980.
- 3.P.D.Dunn, Renewable Energies, Peter Peregrinus Ltd, London, 1986.
4. B.Viswanathan and M. A. Scibioh, Fuel Cells-Principles and Applications, University Press, 2006.
5. Hart, A.B and G.J.Womack, Fuel Cells: Theory and Application, Prentice Hall, NewYork, 1989.

ANNEXURE – VI(a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
III Year – VI Semester B.Sc.(Physics)
DSC – 2 Cluster Elective paper Lab Practical VIII(C-3)
w.e.f – 2017 -2018

Minimum of 6 experiments to be done and recorded 2hrs/Week

1. Study of charge and discharge characteristics of storage battery.
2. Study of charging and discharging behavior of a capacitor.
3. Determination of efficiency of DC-AC inverter and DC-DC converters
4. Study of charging characteristics of a Ni-Cd battery using solar photovoltaic panel.
5. Performance estimation of a fuel cell.
6. Study of effect of temperature on the performance of fuel cell.

ANNEXURE – VII (a)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
SECOND YEAR B.Sc. PHYSICS (FOR NON-MATHEMATICS COMBINATIONS)
THIRD SEMESTER
CORE COURSE-III: THERMODYNAMICS AND WAVE OPTICS
(w. e. f. 2016-2017)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I(12 hrs)

1. Kinetic theory of Gases-Zeroth law of thermodynamics, Measurement of temperature-resistance thermometry, thermoelectric thermometers-kinetic theory of gases- assumptions-pressure of an ideal gas -molecular interpretation of temperature- Maxwell's law of distribution of molecular speeds(no derivation)-experimental verification.

UNIT-II(12 hrs)

2. Thermodynamics

The first law of thermodynamics- work done in isothermal and adiabatic changes -Reversible and irreversible process-Carnot's cycle-Carnot's theorem - Second law of thermodynamics, Kelvin's and Clausius statements -Entropy, physical significance-Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of universe.

UNIT-III(12 hrs)

3. Thermoelectricity -Seebeck effect variation of thermo – emf with temperature.Thermo electric series -Measurement of thermoemf using potentiometer, Law of intermediate metals and intermediate temperatures - Peltier effect, Demonstration Peltier coefficient. Thomson effect demonstration Thomson coefficient, Thermoelectric diagrams and their uses, Thermoelectric power. Application of Thermoelectric effects.

UNIT –IV(11 hrs)

1. Geometric optics Aberrations in lenses-Chromatic Aberration-Achromatic Combination of lenses Monochromatic defects-Spherical aberration-Astigmatism-Coma-Curvature and Distortion Minimizing aberration.

UNIT-V(13 hrs)

2. Interference The superposition principle, Condition for Interference, Classification of Interferences methods Young's double slit experiment-Theory. Interference with white light and appearance of Young's interference fringes-Intensity in interference pattern-Optical Path length, Lloyd's single mirror-Phase change on reflection, Interference due to plane parallel wedge shaped films, Colours in thin films-Newton rings, Determination of wavelength of light. Michelson's interferometer.

REFERENCE BOOKS

1. BSc Physics, Vol.2, Telugu Academy, Hyderabad
2. Physics for Biology and Premedical Students –D.N. Burns & SGG Mac Donald

3. Unified Physics Vol.II, Optics and Thermodynamics, JaiPrakashNath&Co.Ltd., Meerut.
4. Optics, AjoyGhatak, Tata McGraw-Hill.
5. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publication
6. Heat and Thermodynamics, N.Subramanyam and L.Brijlal, S.Chand& Co.
7. Electricity and Magnetism, N.Subramanyam and L.Brijlal, S.Chand& Co.
8. University Physics, HD Young, MW Zemansky, FW Sears, Narosa Publishers, New Delhi

ANNEXURE - VII(b)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
SECOND YEAR B.Sc. PHYSICS (FOR NON-MATHEMATICS COMBINATIONS)
THIRD SEMESTER
CORE COURSE-III: THERMODYNAMICS AND WAVE OPTICS LAB PRACTICAL
(w. e. f. 2016-2017)

Minimum of 6 experiments to be done and recorded 2hrs/Week

1. Determination of radius of curvature of a given convex lens-Newton's rings.
2. Dispersive power of a prism.
3. Refractive index of a liquid-hallow prism
4. Determination of thickness of a thin fiber by wedge method
5. Determination of refractive index of liquid-Boy's method.
6. Specific heat of a liquid –Joule's calorimeter –Barton's radiation correction
7. Thermal conductivity of bad conductor-Lee's method
8. Thermal conductivity of rubber.
9. Measurement of Stefan's constant.
10. Heating efficiency of electrical kettle with varying voltages.
11. Thermoemf- thermo couple potentiometer
12. Thermal behavior of an electric bulb (filament/torch light bulb)
13. Measurement of Stefan's constant- emissive method
14. Study of variation of resistance with temperature - thermistor.

ANNEXURE - VII(c)

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
SECOND YEAR B.Sc. PHYSICS (FOR NON-MATHEMATICS COMBINATIONS)
FOURTH SEMESTER
CORE COURSE-IV: RADIATION PHYSICS AND OPTICS
(w. e. f. 2016-2017)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

Low temperature Physics

1.Introduction-Joule Kelvin effect-porous plug experiment. Joule's expansion-Distinction between adiabatic and Joule Thomson expansion-Liquefaction of helium Kapitza's method-Adiabatic demagnetization-Production of low temperatures-Principle of refrigeration. Applications of substances at low-temperature.

UNIT-II(12 hrs)

Measurement, laws and theories of radiation

2.Black body-Ferry's black body-distribution of energy in the spectrum of Black body- Wein's law- Planck's radiation formula (no derivation)-Measurement of radiation-Types of pyrometers-Disappearing filament optical pyrometer-experimental determination-AngstromPyroheliometer-determination of solar constant, effective temperature of sun.

UNIT-III(12 hrs)

3. Diffraction

The Fresnel and Fraunhofer diffraction phenomena-Fraunhofer diffraction of single Slit normal incidence and oblique incidence – Resolving power –limits of resolution for telescopes and microscope- Fraunhofer diffraction by double slit-Intensity - pattern-Diffraction grating- Wavelength determination (Normal incidence and Minimum deviation).

UNIT-IV(13hrs)

4. Polarization

Types of Polarized light-Polarization by reflection, Brewster's law-Dichroism the Polaroid-double refraction- the calcite crystal -the principal plane-O and E rays-the Nicol Prism, Polariser and Analyser, Law of Malus –the quarter wave plate and half wave plate Plane, Circularly, elliptically polarized light-Production and analysis -Optical activity-Specific rotatory power –Polarimeter.

UNIT V: (12 hrs)

5. Holography & Fiber Optics

Holography: Basic principle of holography-Gabor hologram and its limitations, applications of holography. Introduction- different types of fibres, rays and modes in an optical fibre, fibre material, principles of fiber communication (qualitative treatment only), applications.

REFERENCE BOOKS

1. BSc Physics, Vol.2, Telugu Academy, Hyderabad

2. Physics for Biology and Premedical Students –D.N. Burns & SGG Mac Donald
3. Unified Physics Vol.II, Optics and Thermodynamics,JaiPrakashNath&Co.Ltd., Meerut.
4. Optics, AjoyGhatak, Tata McGraw-Hill.
5. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publication
- 6.Heat and Thermodynamics, N.Subramanyam and L.Brijlal, S.Chand& Co.
7. Electricity and Magnetism, N.Subramanyam and L.Brijlal, S.Chand& Co.
8. University Physics, HD Young, MW Zemansky,FW Sears, Narosa Publishers, New Delhi

ANNEXURE - VII(d)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
SECOND YEAR B.Sc. PHYSICS (FOR NON-MATHEMATICS COMBINATIONS)
FOURTH SEMESTER
CORE COURSE-IV: RADIATION PHYSICS AND OPTICS LAB PRACTICAL
(w. e. f. 2016-2017)

Minimum of 6 experiments to be done and recorded 2hrs/Week

1. Specific heat of a liquid by applying Newton's law of cooling correction.
2. Measurement of Stefan's constant- emissive method
3. Resolving power of grating.
4. Study of optical rotation –polarimeter.
5. Determination of wavelength of light using diffraction grating-minimum deviation method.
6. Determination of wavelength of light using diffraction grating-normal incidence method.
7. Resolving power of a telescope.
8. Determination of wave length of laser light using diffraction grating

Computer Science

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)

B.Sc. Three-Year Degree Course (Semester Wise)

Syllabus for IIIrd Year – Vth Semester.

Part – II : COMPUTER SCIENCE

Paper-V: DATA BASE MANAGEMENT SYSTEM

No. of hours per week: 04

Max Marks: 75

UNIT I

Overview of Database Management System: Introduction, file-based system, Drawbacks of file-Based System, Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, DBMS Approach, advantages of DBMS, Anis/spark Data Model, data models, Components and Interfaces of Database Management System. Database Architecture, Situations where DBMS is not Necessary, DBMS Vendors and Their Products.

UNIT II

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, **IS A** relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modeling.

UNIT III

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus, domain relational Calculus (DRC). QBE

UNIT IV

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, View, Sub Query, Embedded SQL

UNIT V

PL/SQL: Introduction, Shortcoming in SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages, Exceptions Handling, Database Triggers, Types of Triggers.

Reference Books

1. "Database System Concepts" by Abraham Silberschatz, Henry Korth, and S.Sudarshan, McGrawhill, 2010, 9780073523323
2. "Database Management Systems" by Raghu Ramakrishnan, McGrawhill, 2002,
3. Fundamentals of Relational Database Management Systems by S.Sumathi, S.Esakkirajan, Springer Publications
4. "An Introduction to Database Systems" by Bipin C Desai

5. “Principles of Database Systems” by J. D. Ullman
6. “Fundamentals of Database Systems” by R. Elmasri and S. Navathe

ANNEXURE - II

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IIIrd Year – Vth Semester.

Part – II: COMPUTER SCIENCE

Paper-VI: SOFTWARE ENGINEERING

No. of hours per week : 04

Max Marks :75

UNIT I

INTRODUCTION: Software Engineering Process paradigms - Project management - Process and Project Metrics – software estimation - Empirical estimation models - Planning - Risk analysis - Software project scheduling.

UNIT II

REQUIREMENTS ANALYSIS : Requirement Engineering Processes – Feasibility Study – Problem of Requirements – Software Requirement Analysis – Analysis Concepts and Principles – Analysis Process – Analysis Model

UNIT III

SOFTWARE DESIGN: Software design - Abstraction - Modularity - Software Architecture - Effective modular design - Cohesion and Coupling - Architectural design and Procedural design - Data flow oriented design.

UNIT IV

USER INTERFACE DESIGN AND REAL TIME SYSTEMS :User interface design - Human factors - Human computer interaction - Human - Computer Interface design - Interface design - Interface standards.

UNIT V

SOFTWARE QUALITY AND TESTING :Software Quality Assurance - Quality metrics - Software Reliability - Software testing - Path testing – Control Structures testing - Black Box testing - Integration, Validation and system testing - Reverse Engineering and Re-engineering. CASE tools –projects management, tools - analysis and design tools – programming tools - integration and testing tool - Case studies.

REFERENCE BOOKS:

1. Roger Pressman S., “Software Engineering: A Practitioner's Approach”, 7th Edition, McGraw Hill, 2010.
2. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
3. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007
4. Pfleeger, “Software Engineering: Theory & Practice”, 3rd Edition, Pearson Education, 2009
5. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, “Fundamentals of Software Engineering”, Pearson Education, 2003

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER SCIENCE

Paper-VII: Operating System

No. of hours per week: 04

Max Marks: 75

UNIT - I

Operating System Introduction: Operating Systems Objectives and functions, Computer System Architecture, OS Structure, OS Operations, Evolution of Operating Systems - Simple Batch, Multi programmed, time shared, Parallel, Distributed Systems, Real-Time Systems, Operating System services.

UNIT - II

Process and CPU Scheduling - Process concepts - The Process, Process State, Process Control Block, Threads, Process Scheduling - Scheduling Queues, Schedulers, Context Switch, Preemptive Scheduling, Dispatcher, Scheduling Criteria, Scheduling algorithms, Case studies: Linux, Windows.

Process Coordination - Process Synchronization, The Critical section Problem, Synchronization Hardware, Semaphores, and Classic Problems of Synchronization, Monitors, Case Studies: Linux, Windows.

UNIT - III

Memory Management and Virtual Memory - Logical & physical Address Space, Swapping, Contiguous Allocation, Paging, Structure of Page Table. Segmentation, Segmentation with Paging, Virtual Memory, Demand Paging, Performance of Demanding Paging, Page Replacement Page Replacement Algorithms, Allocation of Frames.

UNIT - IV

File System Interface - The Concept of a File, Access methods, Directory Structure, File System Mounting, File Sharing, Protection, File System Structure

Mass Storage Structure - Overview of Mass Storage Structure, Disk Structure, Disk Attachment, Disk Scheduling.

UNIT - V

Deadlocks - System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.

REFERENCES BOOKS:

1. Operating System Principles, Abraham Silberchatz, Peter B. Galvin, Greg Gagne 8th Edition, Wiley Student Edition.
2. Principles of Operating Systems by Naresh Chauhan, OXFORD University Press
3. Operating systems - Internals and Design Principles, W. Stallings, 6th Edition, Pearson.
4. Modern Operating Systems, Andrew S Tanenbaum 3rd Edition PHI.
5. Operating Systems A concept - based Approach, 2nd Edition, D. M. Dhamdhare, TMH.
6. Principles of Operating Systems, B. L. Stuart, Cengage learning, India Edition.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER SCIENCE

(Cluster)Paper-VIII: Elective-1: Distributed Systems

No. of hours per week: 04

Max Marks: 75

UNIT I

Introduction to Distributed Computing Systems, System Models, and Issues in Designing a Distributed Operating System, Examples of distributed systems.

UNIT II

Features of Message Passing System, Synchronization and Buffering, Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism, Stub Generation and RPC Messages, Server Management, Call Semantics, Communication Protocols and Client Server Binding.

UNIT III

Introduction, Design and implementation of DSM system, Granularity and Consistency Model, Advantages of DSM, Clock Synchronization, Event Ordering, Mutual exclusion, Deadlock, Election Algorithms.

UNIT IV

Task Assignment Approach, Load Balancing Approach, Load Sharing Approach, Process Migration and Threads.

UNIT V

File Models, File Accessing Models, File Sharing Semantics, File Caching Schemes, File Replication, Atomic Transactions, Cryptography, Authentication, Access control and Digital Signatures.

Reference Books

1. Pradeep. K. Sinha: “ Distributed Operating Systems: Concepts and Design”, PHI, 2007.
2. George Coulouris, Jean Dollimore, Tim Kindberg: “ Distributed Systems”, Concept and Design, 3rd Edition, Pearson Education, 2005.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
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CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER SCIENCE

(Cluster)Paper-VIII: Elective-2: Cloud Computing

No. of hours per week: 04

Max Marks: 75

Unit 1

Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , Measured service

Unit II

Cloud scenarios – Benefits: scalability , simplicity , vendors ,security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

Unit III

Cloud architecture: Cloud delivery model – SPI framework , SPI evolution , SPI vs. traditional IT Model

Software as a Service (SaaS): SaaS service providers – Google App Engine, Salesforce.com and google platform – Benefits – Operational benefits - Economic benefits – Evaluating SaaS

Platform as a Service (PaaS): PaaS service providers – Right Scale – Salesforce.com – Rackspace – Force.com – Services and Benefits

Unit IV

Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid – Microsoft soft implementation and support – Amazon EC service level agreement – Recent developments – Benefits **Cloud deployment model :** Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing

Unit V

Virtualization: Virtualization and cloud computing - Need of virtualization – cost , administration , fast deployment , reduce infrastructure cost - limitations

Types of hardware virtualization: Full virtualization - partial virtualization - para virtualization

Desktop virtualization: Software virtualization – Memory virtualization - Storage virtualization – Data virtualization – Network virtualization **Microsoft Implementation:** Microsoft Hyper V – VMware features and infrastructure – Virtual Box - Thin client

Reference Books

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti, University Press

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IIIrd Year – VIth Semester.

Part – II : COMPUTER SCIENCE

(Cluster)Paper-VIII: Elective -3:Grid Computing

No. of hours per week: 04

Max Marks: 75

UNIT I

CONCEPTS AND ARCHITECTURE :Introduction-Parallel and Distributed Computing- Cluster Computing-Grid Computing- Anatomy and Physiology of Grid- Web and Grid Services- Grid Standards - OGSA-WSRF - Trends, Challenges and applications.

UNIT II

GRID MONITORING :Grid Monitoring Architecture (GMA) - An Overview of Grid Monitoring Systems- R-GMA –Grid ICE – MDS- Service Level Agreements (SLAs) -Other Monitoring Systems- Ganglia, Grid Mon, Hawkeye and Network Weather Service.

UNIT III

GRID SECURITY AND RESOURCE MANAGEMENT: Grid Security-A Brief Security Primer-PKI-X509 Certificates-Grid Security-Grid Scheduling and Resource Management, Grid way and Grid bus Broker-principles of Local Schedulers- Overview of Condor, SGE, PBS, LSF - Grid Scheduling with QoS.

UNIT IV

DATA MANAGEMENT AND GRID PORTALS :Data Management-Categories and Origins of Structured Data-Data Management Challenges-Architectural Approaches-Collective Data Management Services-Federation Services-Grid Portals-Generations of Grid Portals.

UNIT V

GRID MIDDLEWARE: List of globally available Middleware"s - Case Studies-Recent version of Globus Toolkit and gLite - Architecture, Components and Features. Features of Next generation grid.

Reference Books

1. Ian Foster, Carl Kesselman, The Grid 2: Blueprint for a New Computing Infrastructure, Elsevier Series, 2004.
2. Vladimir Silva, Grid Computing for Developers, Charles River Media, January 2006.
3. Parvin Asadzadeh, Rajkumar Buyya, Chun Ling Kei,Deepa Nayar, and Srikumar Venugopal, Global Grids and Software Toolkits: A Study of Four Grid Middleware Technologies, High Performance Computing : Paradigm and Infrastructure, Laurence Yang and Minyi Guo (editor s), Wiley Press, New Jersey, USA, June 2005.
4. Jarek Nabrzyski, Jennifer M. Schopf, Jan Weglarz , Grid Resource Management: State of the Art and Future Trends , (International Series in Operations Research & Management Science), Springer; First edition, 2003

M.Sc. Botany

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

SEMESTER-I

PAPER 102: Algae, Bryophyta, Pteridophyta and Gymnosperms

UNIT – 1: ALGAE

General characters of algae -thallus diversity, pigmentation and life cycles. Recent trends in classification of algae - a general account. Salient features and classification of Cyanophyta (Cyanobacteria), Rhodophyta, Phaeophyta, Bacillariophyta and Chlorophyta. Economic importance of algae: Algae as food(single cell proteins); biofertilizers; industrial products; biofuels; harmful algae-algal blooms.

UNIT II: BRYOPHYTES

General characters and classification of Marchantiophyta; Anthocerotophyta and Bryophyta. Salient features of the orders and representatives: Marchantiales (Marchantia), Jungermanniales (Porella), Anthocerales (Anthoceros) and Polytrichales (Polytrichum). Diversity and evolution of gametophyte and sporophyte. Ecology and Conservation of bryophytes.

UNIT III: PTERIDOPHYTES

General characters and classification of pteridophytes. Classification of extinct pteridophytes and salient features of representatives: Psilotopsida (Psilotum), Lycopsidea (Lycopodium), Equisetopsida (Equisetum), Marattiopsida (Angiopteris) and Polypodopsida (Pteris). Origin and phylogeny of pteridophytes- telome theory , stelar theory. Heterospory and Seed habit.

UNIT IV: GYMNOSPERMS AND PLANT FOSSILS

General characters and classification of divisions and salient features of representatives: Cycadophyta (Cycas), Pinophyta (Pinus), Ginkgophyta (Ginkgo) and Gnetophyta (Gnetum). Economic importance of gymnosperms. Principles of Paleobotany - geological time scale; process of fossilization; types of fossils. Salient features and evolutionary significance of fossil gymnosperms - Pteridospermales and Bennitiales.

PRACTICALS

1. Observation of representatives of all groups in the natural habitat.
2. Morphological study of representative members of all groups using whole mount preparations and sections.
3. Study of morphology and anatomy of vegetative structures of Algae, Bryophytes, Pteridophytes and Gymnosperms
4. Each student has to submit herbarium specimens and a report on field study.

SUGGESTED READINGS:

1. Agashe S.N. 1995. Paleobotany. Oxford & IBH, NewDelhi
2. Bernard Goffinet & Jonathan Shaw. 2008. Bryophyte Biology. 2nd ed. Cambridge University Press.
3. Bhatnagar, S.P. & Alok Mitra. 1997. Gymnosperms. New Age Int. (P) Ltd.
4. Charles C. Beck and Charles B. Beck. (Ed). 1988. Origin and Evolution of Gymnosperms. CUP.
5. Chopra, R.N. & P.K. Kumar. 1988. Biology of Bryophytes. Wiley Eastern.
6. Graham, J.E., Lee, W. Wilox & L.E. Graham. 2008. Algae. 2nd ed. Benjamin Cummings
7. Sambamurthy AVSS. 2005. A Text Book of Bryophytes, Pteridophytes, Gymnosperms and Paleobotany. IK International Pvt. Ltd.
8. Sporne, K.R. 1965. Morphology of Gymnosperms. HUP, London
9. Sporne, K.R. 1976. Morphology of Pteridophytes. HUP, London
10. Van den Hoek , Christian D. Mann & H.M. Jahns et al. 1995. Algae, An introduction to phycology. Cambridge University Press.
11. Vashista, P.C. 2005. Gymnosperms. S.Chand & Co., New Delhi
12. Vashista, P.C. 2005. Pteridophyta. Revised ed., By Sinha and Anil. S. Chand & Co, New Delhi.
13. Vashishta, B.R., V.P.Singh & A.P. Sinha. 2012. Botany for Degree Students: Algae. 34th ed. S. Chand & Co, New Delhi.
14. Vashishta, B.R., A.K. Sinha & Adarsh Kumar . 2011. Botany for Degree Students Part III Bryophyta.. 3rd ed. S. Chand & Co, New Delhi

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PAPER 102: PLANT TAXONOMY

UNIT – 1: ANGIOSPERMIC CLASSIFICATION AND PHYLOGENY

Plant taxonomy- scope and significance. History of plant classifications: Artificial, Natural and Phylogenetic classifications. Natural system- Bentham and Hooker's classification. Principles of phylogenetic classifications–data sources; Plesiomorphy, apomorphy; monophyly and polyphyly. Cladograms and Phylogenetic trees. Angiospermic Phylogeny Group classification (APG-III). Clades, Orders and Families. A Comprehensive account on origin, phylogeny and diversification of angiosperms.

UNIT –II: FLORISTIC STUDIES AND HERBARIUM METHODOLOGY

Plant explorations around the world – a general account. Floristic inventories in India – a general account. Botanical Survey of India - organisation and activities. Flora of Andhra Pradesh – a general account; endemic plants and threatened taxa. Herbarium methodology- methods of collection, processing and preservation of plant specimens. Significant herbaria of the world and India.

UNIT – III: PLANT IDENTIFICATION AND NOMENCLATURE

Process of identification- conventional and modern approaches; Preparation of taxonomic keys. Taxonomic literature- floras, journals and databases. International Code of Nomenclature(ICN)- Principles, Rules and Recommendations; taxonomic hierarchy-species, genera and families; typification , rule of priority; concept of names and author citation; effective and valid publication. Describing a new species.

UNIT – IV: STUDY OF SELECTED ANGIOSPERMIC CLADES-ORDERS

Salient features , distribution and diversity of the following groups (based on APG –III); ANITA Grade; Magnolids (Magnoliales- Annonaceae); Monocots (Asparagales- Orchidaceae); Commelinids (Poales- Poaceae); Fabids (Fabales- Fabaceae, Malpighiales- Euphorbiaceae); Malvids (Malvales- Malvaceae, Caryophyllales-Amaranthaceae); Lamids (Gentianales- Apocyanaceae, Solanales- Solanaceae, Lamiales- Lamiaceae); Campanulids (Asterales- Asteraceae).

PRACTICALS

1. Study of about 25 wild taxa representing different families and identification to species level
2. Study of flora of the college campus
3. As a part of Botanical Tour, student should observe and record the flora and vegetation types of the study area and submit a report at the time of practical examination
4. Part of practical, student should submit 50 herbarium specimens of common wild plant taxa
5. Construction of Taxonomic Keys
6. Nomenclatural exercise

SUGGESTED READINGS:

1. Angiosperm Phylogeny Group website. 2015. Consult www.apgweb.org.
2. Gamble & Fischer 1915-35. Flora of Presidency of Madras. 3 Vols. BSMS, Dehradun

3. Heywood, V.H., RK Burmmitt, A. Culham, O. Seberg. 2007. Flowering plant Families of the World. Firefly books Ltd. New York.
4. Judd, W.S., Christopher, S. Campbell, Elizabeth A. Kellogg, Peter F. Stevens and Michael J. Donoghue. 2007. Plant Systematics: A Phylogenetic Approach, 3rd ed. Sinauer.
5. Lawrence, G.H.M. 1951. Taxonomy of vascular plants. McMillan , New York.
6. Naik, V.N. 1992. Taxonomy of Angiosperms. 2nd Edn. Tata Mc Graw Hill Publications.
7. Pullaiah, T. 2005. Taxonomy of Angiosperms. Regency publications, New Delhi.
8. Pullaiah, T. et al. 1997. Flora of Andhra Pradesh. 4 Vols. Scientific Publishers, Jodhpur
9. Radford, A.E. et. al. Vascular plant systematic. Harper & Row. New York.
10. Ravi Prasad Rao, B. 2014. The Plant Directory. Anusha Publishers, Hyderabad.
11. Simpson, Michael G. 2006. Plant Systematics. Elsevier & Academic Press.
12. Singh, Gurucharan. 2005. Plant Systematics. Oxford & IBH. New Delhi.
13. Sivarajan, V.V. 1991. Introduction to Principles of Plant Taxonomy. Oxford & IBH. New Delhi.

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PAPER 103: PLANT DEVELOPMENT AND REPRODUCTION

UNIT –I: MERISTEMS, TISSUE SYSTEMS AND SHOOT DEVELOPMENT

Meristems, classification and types. Organization of shoot apical meristem. Simple and Complex tissues. Structure and development of xylem and phloem. Epidermal, ground and vascular tissue systems - cambium, laticifers, periderm, lenticels, Stem-anatomy of node, primary structure and secondary growth: annual rings, heart wood and sap wood , hard and soft wood, reaction wood. Anamalous secondary growth.

UNIT – II: ROOT, LEAF AND FLOWER DEVELOPMENT

Root-Organization of Root apical meristem (RAM), quiescent centre, vascular tissue differentiation. Primary structure and Secondary growth in roots. Leaf growth and differentiation-histology and development of angiosperm leaf . Floral meristems- development of flower with reference to Arabidopsis and Antirrhinum. Programmed cell death, ageing and senescence.

UNIT III: PLANT REPRODUCTION-MALE AND FEMALE GAMETOPHYTES

Microsporangium, microsporogenesis and male gametophyte. Anthers-structure and development of anther wall– anther tapetum- secretary and periplasmodial, role of tapetum. Male gametophyte development. Pollen wall –structure and development. Types of ovules, megasporogenesis. Embryosac – ultra structure, development and types: monosporic, bisporic and tetrasporic; nutrition of the embryosac. Pollination and fertilization: pollen–pistil interactions, double fertilization.

UNIT IV: ENDOSPERM, EMBRYO, POLYEMBRYONY AND APOMIXIS

Development of Endosperm-nuclear, cellular and helobial types; endosperm haustoria, composite and ruminant endosperm. Development of embryo in dicots- onagrad, asterad, chenopodiad, caryophyllad and solanad types; suspensor. Polyembryony – nucellar, integumentary, synergid, zygotic, suspensor and multiple types; twins and triplets; causes of polyembryony and applications. Apomixis- apospory, diplospory, psedogamy, semigamy, parthenogenesis.

PRACTICALS

1. Examination of meristems
2. Study of tissues and tissue systems.
3. Study of internal organization of different types of stems and roots.
4. Study of internal organization of plants showing anomalous secondary growth.
5. Study of epidermal peels of leaves to study the development and structure of stomata for stomatal index.
6. Study of microsporogenesis and gametogenesis in anther sections.
7. Examination of anthers dehiscence and collection of pollen grains for microscopic examination (maize, grasses, brinjal, Crotalaria, Tradescantia,

Brassica, Petunia, etc.)

8. Study of pollen grains by acetolysis.

9. Dissection and mouting of endosperm and embryo showing developmental stages and haustoria.

SUGGESTED READINGS:

1. Bhojwani, S.S. and S.P. Bhatnagar 2002. The embryology of Angiosperms (4th ed.) Vikas Publication House, New Delhi.
2. Eames, A.J. and E.M. McDaniels. 1947. An Introduction to Plant Anatomy. Mc Graw Hill Book Company ,New York.
3. Esau. K. 1979. Anatomy of seed plants. John Willy & Sons
4. Fahn. A. 1992. Plant Anatomy 3rd Ed. Pergamon press,Oxford.
5. Johri, B.M. 1984, Embryology of Angiosperms Springer-Verlag ,Berlin.
6. Johri, B.M. 1981. Experimental embryology of vascular plants. Springer-Verlag, Berlin.
7. Maheswari,P.1980. An Introduction to the Embryology of Angiosperms, Tata, mccrawin
8. Pullaiah, T., K.C. Naidu, K. Laxmi Narayana and B. Hanumantha Rao. 2007. Plant Development , Regency Publications , New Delhi.
9. Raghavan, V. 1999. Developmental Biology of Flowering Plants. Springer Verlag, Berlin.

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PAPER 104: PLANT PHYSIOLOGY

UNIT I: PLANT AND SOIL WATER RELATIONS

Thermodynamic concept of plant cell and water relations. Water Potential, Osmotic potential and Pressure potential. Dynamics of SPAC. Active and Passive absorption of Ions. Essential elements- functions and deficiency symptoms. Stomatal structural features; mechanism of stomatal movements and stomatal Index. Stomatal responses to environmental factors, antitranspirants and their importance in drought resistance.

UNIT II: PHOTOSYNTHESIS

Current knowledge on mechanism of photosynthesis- LHCs, photochemical reactions, electron transport in chloroplasts. Oxygen evolution and photophosphorylation. Carbon fixation pathways- Reductive PPP and its regulation by light and metabolites; C4 pathway; CAM Pathway; C-3, C-4 Intermediates. Photosynthesis vs. Plant productivity. Photorespiration- Glycolate pathway, Significance of photorespiration.

UNIT III: RESPIRATION AND PLANT GROWTH REGULATORS

Significance of Plant Respiration; Glycolysis, TCA Cycle, ETS and ATP synthesis. Pentose Phosphate Pathway. Glyoxylate cycle, Alternate oxidase system. Biosynthesis and mechanism of action of plant growth regulators- Auxins, Gibberellins, Cytokinins, Brassinosteroids, Abscissic acid, Jasmonic acid and salicylic acid. Role of hormones in agriculture. Physiology of flowering- Kinetics of phytochrome; Photoperiodism

UNIT IV: NITROGEN METABOLISM

Biological nitrogen fixation : Symbiotic and Asymbiotic; Legume - Rhizobium symbiosis; nodule formation; mechanism of nitrogen fixation; mechanism of nitrate uptake, reduction and ammonia assimilation.

PRACTICALS

1. Determination of total chlorophyll content and a/b ratio in leaves.
2. Separation of chloroplast pigments into two or four groups. Record of their absorption spectra
3. Determination of cell permeability by using Beet Root tissues.
4. Determination of stomatal index and frequency in leaves
5. Determination of water potential of the tissue
6. Comparative anatomy of C3, C4 and CAM plants
7. Determination of Titrable acidity (TAN) in leaves of CAM plants
8. Determination of viability of different seed material.
9. Estimation of IAA by Solkowsky rection
10. Determination of membrane stability and chlorophyll stability index
11. Estimation of free proline in stressed plant samples.

SUGGESTED READINGS

1. Buchannan et al., 2001. Biochemistry and Molecular Biology of plants.
2. Delvin ,RM. 1969. Plant Physiology. Affiliated East West Newyork Ltd.
3. Dennis, DT., DB. Layzell, DD. Lefebyre & D. Turpin. 1997. Plant Metabolism . 2nd Ed. Addison Wesley Pub Co. New York
4. Govindjee, ed. 1982-83. Photosynthesis. Vol I & II. Academic Press Inc. New York.
5. Hopkins, W. 1998. Introduction to Plant Physiology. ELBS & Longman, Essex., England.
6. Kocchar and Gujral. 2012. Comprehensive Plant Physiology. Mac Milan Pub.
7. Raghavendra, S. 1998. Photosynthesis: A Comprehensive Treatise. Cambridge University Press, Cambridge, UK
8. Salisbury, F.B. and C. S. Ross. 1992. Plant Physiology. 4th Ed. Worsworth Publishing & Co. , Belmont , California.
9. Taiz and E. Zeiger. 1998. Plant Physiology. 2nd Edition. Sinauer Associates Inc Publishers, Massachusetts, USA
10. Thomas C. Moore. 1992. Biochemistry and Physiology of Hormones. Narosa .
11. Wilmer, C.M. & M. Fricker. 1996. Stomata. 2nd Ed, Chapman Hall.

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SEMESTER –II

PAPER 201 : FUNGI, PLANT PATHOLOGY AND PLANT BREEDING

UNIT I: FUNGI

General characteristics and modern trends in fungal classification. Salient features and classification of Gymnomycota (Myxomycota). Mastigomycota, Deuteromycota and Amastigomycota (Zygomycotina, Ascomycotina, Basidiomycotina). Structure and reproduction of lichens and mycorrhizae; economic importance of fungi- beneficial and harmful; mushroom cultivation.

UNIT II: PLANT DISEASES (FUNGAL)

Classification of fungal diseases. Symptomatology of fungal diseases. Disease cycle and control measures of club rot of crucifers, rust of wheat, smut of sorghum, powdery mildew of grapes, red rot of sugarcane, leaf spot of groundnut. Control of fungal diseases- physical, chemical and biological methods. General account on Integrated Pest Management.

UNIT III: PLANT DISEASES (BACTERIAL AND VIRAL)

General characteristics and modern classification of bacteria. Plant diseases caused by bacteria- symptomatology and disease cycle of leaf blight of rice, blight of cotton, common scab of potato and citrus canker. Plant viruses: classification, transmission and control of plant viruses; a brief account on plant diseases caused by viruses- yellow mosaic of legumes, mosaic disease of tobacco, bunchy top of banana.

UNIT IV: PLANT BREEDING

Methods of Breeding for Self Pollinated and Vegetatively Propagated Crops. Pureline selection, Mass selection, Clonal Selection, Marker- assisted Selection. Hybridization, Pedigree method. Synthetic varieties. Methods of Breeding for Cross Pollinated Crops. Hybrid vigour, Inbreeding Depression and Genetic basis of Heterosis.

PRACTICALS

1. Study of gram negative and gram positive bacteria
2. Morphological study of different fungal spores
3. Study of symptomatology of locally available diseased specimens
4. Plant Breeding Experiments

SUGGESTED READINGS:

1. Agrios, GN. 2005. Plant Pathology. 5th ed. Academic Press.
2. Ainsworth, G.C., E.K. Sparrow and A.S. Sussman. 1973. The Fungi- An Advanced Treatise. Academic Press.
3. Alexopolous, C.J., C.W. Mims & M. Blackwell 1996. Introductory Mycology. John Wiley & Sons.
4. Madigan, M.t. and John M.Martinko.2014. Brocks Biology of Microorganisms. 14th ed.Pearson Education.
5. David Allen Sleper & J.M. Poehlman. 2006. Breeding Field Crops. 5th Ed. John Wiley & Sons.
6. D.K. Maheswari. & R.C. Dube. 2013. Microbiology. S. Chand & Co. Ltd., New Delhi.
7. Gilbert, O.L. 2000. Lichens. Collins New Naturalist
8. Jens H. Peterson. 2013. The Kingdom of Fungi. Princeton University Press
9. Mehrotra, R.S. & K.R. Aneja. 1990. An Introduction to Mycology. Wiley Eastern Ltd.
10. Pandey, B.P. 2005. Plant Pathology. S.Chand & Company, New Delhi.
11. Pelczar, M.J., E.C.S. Chan &N.R. Krieg. 1986. Microbiology. Tata McGraw Hill, New Delhi.
12. Robert W.Allard. 1999. Plant Breeding. 2nd ed. John Wiley & Sons.
13. Singh, R.S. 2009. Introduction to Principles of Pathology. 4th ed.
14. Vashishta, B.R. 2002. Fungi. 11th ed. S.Chand & Co. New Delhi.

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Re-Accredited by NAAC with Grade "A"
PAPER 202 : MOLECULAR GENETICS AND TECHNIQUES IN BIOLOGY

UNIT I: INHERITANCE, RECOMBINATION AND MAPPING

Mendelian laws of inheritance- an overview. Linkage, Chromosome as a linkage unit, factors affecting linkage; Genetic recombination: types and molecular mechanism of recombination. Factors affecting recombination. Chromosomal mapping; Two factor and Three factor mapping, Mapping by recombinational frequencies. Coefficient of coincidence of double crosses, Interference –types and significance.

UNIT II: MUTATION AND POPULATION GENETICS

Modern concept of gene, Mutations–types. Chromosomal structural aberrations: deficiencies, duplications, translocations, inversions and their significance in evolution. Numerical changes in chromosomes: aneuploidy and euploidy, polyploidy and their significance in evolution; molecular mechanism of mutagenesis.

UNIT III: pH, MICROSCOPY, CENTIFUGATION AND CHROMATOGRAPHY

pH- Measurement of pH, biochemical buffers, Principles and applications of Microscopy- Light microscope, Phase contrast and Electron microscope. Fixation and staining methods. Centrifugation – basic principles of sedimentation, Types of centrifuges. Preparative ultracentrifugation- differential centrifugation, density gradient, analytical ultracentrifugation and applications. General principles, definitions and applications of chromatography. Paper chromatography, thin-layer chromatography, gas-liquid chromatography.

UNIT IV: ELECTROPHORESIS, SPECTROSCOPY AND RADIO ISOTOPE TECHNIQUES

Principles, definition and applications of SDS-PAGE, Agarose gel electrophoresis. Laws of light absorption, Instrumentation and applications of UV-Visible spectrophotometer. Radioisotope Techniques –types of isotopes, radioactive decay. Detection and measurement of radioactivity. Autoradiography, Isotopes used in biology.

PRACTICALS

1. Problems related to Genetics
2. Separation and identification of amino acids by paper chromatography
3. Separation and identification of sugars by TLC
4. Separation and identification of Lipids by TLC
5. Separation of amino acids by Ion –exchange chromatography
6. Separation of proteins by PAGE
7. Separation of Pigments by paper chromatography
8. Isolation and spectrophotometric characterization of plant pigments.

SUGGESTED READINGS

1. Alberts A et al. 1994. Molecular Biology of cell. Garland publ. New York.
2. Cantor, C.R. and P.R. Schimmel. Biophysical Chemistry by , W.H. Freeman & Co.
3. Cooper Geoffrey, M. 2000. The Cell - a Molecular approach. 2nd Edn. ASM Press, Washington.
4. De Robertis EDP & EMF De Robertis . 2001. Cell and Molecular biology. Lippincott Williams & Wilkins.
5. Freifelder D. 1990. Molecular biology. Narosa publication house, New Delhi.
6. Gardner E J & D P Snustad 1996. Principles of Genetics. John Wiley, New York.
7. Glasel A. and M.P. Deutscher. 1995. Introduction to Biophysical Methods for Protein and Nucleic Acid Research. Academic Press.
8. John M. Wigglesworth. 1983. Biochemical research technique (A Practical Introduction)
9. Strickberger MW 1996. Genetics III edn. McMillan, New York.
10. Cooper, T.G. The tools of Biochemistry. Wiley Eastern.
11. Vanholdem, K.E. and W.C. Johnson. 1988. Principles of Physical Biochemistry. Wilson & Walker. 1986. Practical Biochemistry: Principles & Techniques. Cambridge University Press.

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PAPER 203 : PLANT BIOCHEMISTRY

UNIT I: BIOENERGETICS

Energy transformation in living systems, Laws of thermodynamics, free energy and standard free energy changes, Phosphate group transfer and ATP, free energy from hydrolysis of ATP, High energy phosphates as currency of cell. Biological oxidation-reduction reactions and their half reactions.

UNIT II: ENZYMES

Nomenclature and classification- Isoenzymes, structure; Ribonuclease, Lysozyme, Chymotrypsin. Mode of action of enzymes; enzyme-substrate complex Inhibition: Competitive, Non competitive and Feed back inhibition. Regulation of enzyme activity. Enzyme Kinetics: Michaelis- Menten equation and Reversible reactions.

UNIT III: CARBOHYDRATES AND PROTEINS

Classification and properties of carbohydrates of Mono (Glucose, Galactose, Fructose), Oligo (Lactose, Maltose, Sucrose) and Polysaccharides: Homopolysaccharides (Starch, Glycogen, Cellulose and Heteropolysaccharides. Gluconeogenesis. Amino acids: Non standard protein and aminoacids, peptides structure and reactions. Proteins: Primary structure and its sequence determination, Secondary, Tertiary and Quarternary structural features of proteins (Ramachandran plot).

UNIT IV: LIPID METABOLISM

Chemical composition of plant lipids. α - Oxidation and β - Oxidation of fatty acids. Biosynthesis of fatty acids - malonyl CoA and long chain saturated and unsaturated fatty acids.

PRACTICALS

1. Estimation of proteins in plant samples by Biuret or Lowry's method
2. Estimation of Reducing sugars in plant samples by Nelson's method.
3. Determination of Amylase activity in germinating seeds
4. Estimation of Amino acids by Ninhydrin method
5. Determination of Catalase activity in germinating seeds
6. Reaction of amino acids and sugars

SUGGESTED READINGS

1. Buchanan, Gruissen & Jones. 2001. Biochemistry and Molecular Biology of Plants.
2. Dennis, D.T., D.B. Layzell, D.D. Lefebvre & D. Turpin. 1997. Plant Metabolism. 2nd ed. Addison Wesley Pub. Co. New York.
3. Dey and Horborne. 1998. Plant Biochemistry. Academic Press.
4. Heldt, H.W. 1997. Plant Biochemistry and Molecular Biology. OUP.
5. Horton, HR, MoranLA, Ochs RS et al., 2001. Principles of Biochemistry, III edn. Prentice Hall.
6. Lehninger, A.L. 2001. Biochemistry. Kalyani Publishers. Ludhiana.
7. Mathews CK, Van Holde KE and Ahem KG. 2000. Biochemistry III edn. Sanfransico. Benjamin Cummings.
8. Thomas C. Moore. 1992. Biochemistry and Physiology of Plant Hormones. II Eds. Narosa Publishers.
9. Wilkins, M.B. (ed) 1987. Advanced Plant Physiology. ELBS & Longman. Essex., England.

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PAPER 204: OPEN ELECTIVE –I: PLANTS AND HUMAN WELFARE

UNIT I : PLANTS AND ENVIRONMENTAL VALUES

Plants-Ecosystem services. Direct, Indirect and optional (future possibilities of usage) services. Human civilization and Plants – Agriculture and Forestry. Plants and landscape ecology. Plants role in soil protection and water conservation. Role of plants in climate change scenario-carbon credits. Plants in combating pollution- as bioremediants. Poisonous plants. Aliens and invasive species.

UNIT II: PLANT RESOURCES

Brief account of the following plant Resources(examples limited to 10 under each category)- local,common and botanical names; morphology and utility Edible Resources- Cereals, Millets, Pulses, Spices and Condiments; Fruits and Nuts; Vegetables; Starch and Sugar Yielding Plants; Oil yielding plants.Plants yielding essential oils, saponins, fibres, cellulose products: gums, resins, rubber, tannins and dye yielding plants. Plants as sources of timber, biofuels and fire wood. Forage plants and Ornamental Plants.

UNIT III: PLANTS AND MEDICINE

Introduction, History, Scope and importance of Indigenous systems of medicine (Ethnomedicine, Traditional medicine, Ayurveda, Siddha, Unani), Homeopathy and Allopathy. Different types of crude drugs- based on origin,application and purpose/use. Wild and Potential Drug Yielding plants and their therapeutic values with reference to forests of AP. Phytomedicine and Applications; Importance of phytopharmaceuticals, Pharmacognosy-Principles, Identification of different constituents. Classification of Drugs . Analytical methods- drug adulteration and evaluation. Phytopharmacology and Molecular Farming

UNIT IV: PLANTS AS MODEL ORGANISMS

Introduction to model organisms.Types of model organisms. Genomic model organisms, Genetically modified organisms. Use of Model organism. Important model organisms- prokaryotes and Eukaryotes. E.coli., Chlamydomonas reinhardtii, Arabidopsis thaliana, Zea mays, Nicotiana benthamiana . Transgenic plants. Plants as bioreactors. Plantibodies.

SUGGESTED READINGS:

1. Alan beebay & anne- Maria Brennan. 2008. First Ecology. 3rd ed. Oxford University press.
2. Cotton CM. 1996. Ethnobotany: Principles and Applications
3. Cunningham, W.P. & M.A. Cunningham. 2007. Principles of Environmental Science- Inquiry and Applications. Tata Mc Graw Hill Publications. New Delhi.
4. Hill, Albertt, F. 1952. A Text Book of useful plants and plant products. Tata Mc Graw Hill Publications. New Delhi.
5. Kokate , C.K. AP. Purohit & SB .Gokhale. 2000. Pharmacognosy. Nirali Prakasan Publications.
6. Rao, RaviPrasad B. 2005. Biodiversity. In Pullaiah.T. (ed) Taxonomy of Angiosperms. Regency Publications. New Delhi. Pp: 287-317.
7. Sambamurthy, A.V.V. S. & N.S. Subbramaniyan 2000. Economic Botany of Crop Plants. Asiatech Publishers Inc.
8. Trease, GE. And WC. Evans. 2002. Pharmacognosy. Saunders. New York.

M.Sc.Chemistry

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)

III SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2016-2017)

CHEM-OC: 301: PAPER I – ORGANIC SPECTROSCOPY

UNIT - I: UV - VISIBLE SPECTROSCOPY, ORD &CD

UNIT -II: IR & RAMAN SPECTROSCOPY

UNIT -III: ^1H NMR SPECTROSCOPY

UNIT- IV: MASS SPECTROMETRY

UNIT 01: UV - VISIBLE SPECTROSCOPY, ORD &CD

15 Hrs

UV AND VISIBLE SPECTROSCOPY: Various electronic transitions (185-800nm), effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dienes, conjugated polyenes. Fieser-woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls.

ORD: α -Axial haloketone rule and octant rule – Application of these rules in the determination of absolute configuration of cyclohexanones, decalones and cholestanones.

CIRCULAR DICHROISM: Principle – positive and negative cotton effects – Absolute configuration

UNIT 02: IR & RAMAN SPECTROSCOPY

15 Hrs

IR SPECTROSCOPY: Instrumentation and sample handling. Characteristic vibrational frequencies of alkanes, alkenes, alkynes, aromatic compounds, alcohols, ether, phenols and amines. Detailed study of vibrational frequencies of carbonyl compounds (Ketones, aldehydes, esters, amides, acids, anhydrides, lactones, lactams and conjugated carbonyl compounds). Effect of hydrogen bonding and solvent effect on vibrational frequencies, overtones, combination bands and Fermi resonance, FT-IR.

RAMAN SPECTROSCOPY: Characteristic frequencies of functional groups – Applications to identification of organic molecules-comparison of IR and Raman spectroscopy.

UNIT 03: ^1H NMR SPECTROSCOPY

15 Hrs

Nuclear spin, nuclear resonance, Saturation shielding of magnetic nuclei, chemical shifts and its measurements, factors influencing chemical shift, deshielding. Spin-spin interactions, factors influencing coupling constants 'J' classification (ABX, AMX, ABC, A_2B_2 etc.), spin decoupling, basic ideas about instrument, FT-NMR, advantages of FT-NMR

Applications of ^1H NMR : Shielding mechanism, mechanism of measurement, chemical shift values and correlation for protons bonded to carbon (aliphatic, olefinic, aldehydic and aromatic) and other nuclei (alcohols, phenols, enols, carboxylic acids, amines, amides, chemical exchange, effect of deuteration, complex spin-spin interaction between two, three, four and five nuclei (First order spectra), virtual coupling, Stereochemistry, hindered rotation, Karplus curve variation of coupling constant with dihedral angle. Simplification of complex spectra, nuclear magnetic double resonance, contact shift reagents, nuclear Overhauser effect (NOE).

^{13}C NMR Spectroscopy: General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonyl carbon), coupling constants.

UNIT 04: MASS SPECTROMETRY

15 Hrs

Introduction, principle, instrumentation, single and double focusing mass spectrophotometer, Ionisation Methods EI, CI, FD, FAB Factors affecting fragmentation ion analysis, ion abundance, Molecular-ion peak, Nitrogen rule, Base peak, Metastable ion, Isotopic abundance, McLafferty rearrangement. Mass spectral fragmentation patterns of various classes of organic compounds, Alkanes, cyclo alkanes, alkenes, aromatic hydrocarbons, Aliphatic, Aromatic, Aldehydes, Ketones, Alcohols, phenols, aliphatic Aromatic Nitro compounds Nitrites, Nitrates, Nitriles.

References

1. Organic Spectroscopy, W. Kemp 5th Ed, ELBS.2.
2. Spectroscopy of organic compounds, RM Silverstein and other, 5th Ed, John Wiley 1991.
3. Spectroscopy of organic compounds, P.S. Kalsi, Wiley, 1993.
4. NMR in chemistry-A multi nuclear introduction, William Kemp, Mc. Millan, 1986.
5. Spectroscopy methods in organic chemistry, DH Williams & I Flemmi, TMH. 2005.
6. Nuclear Magnetic Resonance Spectroscopy An Introduction to Principles, Applications and experimental methods Joseph B. Lambert and Eugene P. Mzzola (pearson Education inc. Prentice – Hall).
7. Understanding Mass Spectra: A Basic Approach, R. Martin Smith, Second Edition, A (John Wiley & Sons, Inc.).

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)

III SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2016-2017)

CHEM-OC:302: Paper II – MODERN ORGANIC SYNTHESIS

UNIT -I: ORGANO PHOSPHOROUS AND ORGANO SULPHUR COMPOUNDS

UNIT -II: NEW SYNTHETIC REACTIONS

UNIT -III: NEW TECHNIQUES AND CONCEPTS IN ORGANIC SYNTHESIS:

UNIT -IV: SYNTHETIC STRATEGIES

UNIT -I: ORGANO PHOSPHOROUS AND ORGANO SULPHUR COMPOUNDS

15 Hrs

Properties of divalent sulphur and trivalent phosphorous derivatives, nucleophilic reactivities, hard and soft acids and bases, compounds containing phosphorous-oxygen bonds, the phosphoroyl group, molecules with hydrogen bonded to phosphoroyl group, Arbusov reactions, Perkov reactions, compounds containing sulphur-oxygen bonds, sulfoxides and sulfones-Pummerer rearrangements, sulfoxides as oxidizing agents, phosphorous ylides, Wittig's reactions and mechanism, the Emmons-Wadsworth reaction, reactions of sulphur ylides.

UNIT -II: NEW SYNTHETIC REACTIONS

15 Hrs

(i)Protecting Groups: (a) Protection of alcohols by ether, silyl ether and ester formation

(b) Protection of 1,2-diols by acetal, ketal and carbonate formation (c) Protection of amines by acetylation, benzylation, benzyloxycarbonyl, t-butyloxycarbonyl, fmoc and triphenyl methyl groups, (d) Protection of carbonyls by acetal, ketal and thiol acetal (Umpolung) groups,

(e) Protection of carboxylic acids by ester and ortho ester (OBO) formation.

(ii)Baylis-Hillman reaction, RCM olefin metathesis, . Stork-enamine reaction and Umpolung use of dithio acetals.

Solid phase polypeptide synthesis, Solid phase oligonucleotide synthesis, Strategies in oligosaccharide synthesis, Kahne glycosidation, Combinatorial synthesis, Phase transfer catalysis, Tandem synthesis, Baldwin rules, Chiron approach in synthesis, Transformations using esterases and lipases, Determination of absolute configuration (R/S) using Mosher's method and Felkin-Anh model. Use of protecting groups in organic synthesis: fmoc, t-BOC, TBDMS and THP.

15 Hrs

Criteria for disconnection of strategic bonds. Importance of the order of events in organic synthesis. One group and two group C-X disconnections. One group C-C disconnections. Alcohol and carbonyl compounds. Two group C-C disconnections; DielsAlder reaction, 1,3- difunctionalised compounds, Control in carbonyl condensation, 1,5- difunctionalised compounds, Michael addition and Robinson annulation, synthesis of (+) Disparlure by retro synthetic approach.

1. Some modern methods of organic synthesis by W Carruthers
2. Guidebook to organic synthesis, by R K Meckie, D M Smith & R A Atken
3. Organic synthesis by O House
4. Organic synthesis by Michael B Smith
5. Reagents for organic synthesis, by Fieser & Fieser, Vol 1-11(1984)
6. Organic synthesis by Robert E Ireland
7. Organic Synthesis - The disconnection approach by S Warren
8. Organic Synthesis by C Willis and M Willis
9. Handbook of reagents for organic synthesis by Reich and Rigby, Vo I, IV
10. Problems on organic synthesis by Stuart Warren
11. Total synthesis of natural products: the Chiron approach by S.Hanessian
12. Organic chemistry Claydon and others 2005
13. Name Reactions by Jie Jack Li
14. Reagents in Organic synthesis by B.P.Mundy and others.

15. Tandem Organic Reactions by Tse-Lok Ho

16. Advanced Organic Chemistry-Reactions and Mechanism, 2nd Ed. By Bernard Miller and
Rajendra Prasad (Pages 397-414)

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)

III SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2016-2017)

**CHEM-OC: 303: PAPER III – CONFORMATIONAL ANALYSIS, ASYMMETRIC
SYNTHESIS AND ORGANIC PHOTOCHEMISTRY**

UNIT -I: CONFORMATIONAL ANALYSIS (CYCLIC SYSTEMS)

UNIT -II: PRINCIPLES OF ASYMMETRIC SYNTHESIS

UNIT -III: METHODOLOGY OF ASYMMETRIC SYNTHESIS

UNIT -IV: ORGANIC PHOTOCHEMISTRY

UNIT -I: CONFORMATIONAL ANALYSIS (CYCLIC SYSTEMS)

15 Hrs

Study of conformations of cyclohexane, mono, di and polysubstituted cyclohexanes, cyclohexene, cyclohexanone (2-alkyl and 3-alkyl ketone effect), 2-halocyclohexanones, cyclopentane, cyclobutane, cycloheptane, cyclooctane, cyclononane, cyclodecane. Stereo chemistry of decalins, bicyclo[3,3,0]octane and hydrindanes, perhydroanthracene. Conformational structures of piperidine, N-Methylpiperidine, tropane, tropine, pseudotropine, decahydroquinoline and quinolizidine. Conformational effects on the stability and reactivity of diastereomers in cyclic molecules - steric and stereo electronic factors – examples. Factors governing the reactivity of axial and equatorial substituents in cyclohexanes. Stereochemistry of addition to the carbonyl group of a rigid cyclohexanone ring.

UNIT -II: PRINCIPLES OF ASYMMETRIC SYNTHESIS

15 Hrs

Introduction and terminology: Topocity in molecules Homotopic, stereoheterotopic (enantiotopic and diastereotopic) groups and faces- symmetry, substitution and addition criteria. Prochirality nomenclature: Pro-R, Pro-S, Re and Si. Selectivity in synthesis: Stereospecific reactions (substrate stereoselectivity). Stereoselective reactions (product stereoselectivity) :Enantioselectivity and diastereoselectivity. Conditions for stereoselectivity: Symmetry and transition state criteria, kinetic and thermodynamic control. Methods for inducing enantio and diastereoselectivity. Analytical methods: % Enantiomer excess, % enantioselectivity, optical purity, % diastereomeric excess and % diastereoselectivity. Techniques for determination of enantioselectivity: Specific rotation, Chiral ^1H NMR, Chiral lanthanide shift reagents and Chiral HPLC.

UNIT -III: METHODOLOGY OF ASYMMETRIC SYNTHESIS

15 Hrs

Classification of asymmetric reactions into 1. substrate controlled, 2. chiral auxiliary controlled, 3. chiral reagent controlled and 4. chiral catalyst controlled. 1. Substrate controlled asymmetric synthesis: Nucleophilic additions to chiral carbonyl compounds. 1, 2- asymmetric induction, Cram's rule and Felkin-Anh model. 2. Chiral auxiliary controlled asymmetric synthesis: α -Alkylation of chiral enolates,. Use of chiral auxiliaries in Diels-Alder and Cope reactions. 3. Chiral reagent controlled asymmetric synthesis: Asymmetric reductions using BINAL-H. Asymmetric hydroboration using IPC2 BH and IPCBH2. 4. Chiral catalyst controlled asymmetric synthesis: Sharpless,. Asymmetric hydrogenations using chiral Wilkinson biphosphine and Noyori catalysts. Chiral catalyst controlled Diels- Alder reactions, Enzyme mediated enantioselective synthesis: 5. Asymmetric aldol reaction, Diastereoselective aldol reaction.

UNIT IV: ORGANIC PHOTOCHEMISTRY

15 HRS

Photochemistry of π, π^* transitions: Excited states of alkenes, cis-trans isomerisation, photostationary state, electrocyclicalisation and sigmatropic rearrangements, di- π methane rearrangement. Intermolecular reactions, photocycloadditions, photodimerisation of simple and

Conjugated olefins. Photoisomerisation of benzene Photochemistry of n, π^* transitions: Excited states of carbonyl compounds, homolytic cleavage of α - bond Norrish type I reaction in acyclic and cyclic ketones and strained cycloalkanediones. Intermolecular abstraction of hydrogen: photoreduction and photooxidation- influence of temperature, solvent and nature of hydrogen donor and structure of the substrate Intramolecular abstraction of hydrogen: Norrish type II reaction, Addition to carbon-carbon multiple bonds, Paterno-Buchi reaction, Photochemistry of nitrites-Barton reaction.

Recommended Books:

1. Stereochemistry of organic compounds — Principles & Applications by D Nasipuri
2. The third dimension in organic chemistry, by Alan Bassendale
3. Stereochemistry: Conformation & Mechanism by P S Kalsi
4. Stereochemistry of Carbon compounds by Ernest L Eliel
5. Stereoselectivity in organic synthesis by R S Ward.
6. Asymmetric synthesis by Nogradi
7. Asymmetric organic reactions by it) Morrison and HS Moschr
8. Stereo differentiating reactions by Izumi
9. Some modern methods of organic synthesis by W Carruthers

10. Guidebook to organic synthesis, by R K Meckie, D M Smith & R A Atken
11. Organic synthesis by Michael B Smith
12. Molecular Reactions and Photo chemistry by Depuy and Chapman
13. Photochemistry by C W S Wells
14. Organic Photochemistry by Turro
15. Molecular Photochemistry by Gilbert & Baggo
16. Organic Photochemistry by D Coyle

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)

III SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2016-2017)

(CHEM-OC: 304: Paper IV – BIO-ORGANIC CHEMISTRY)

UNIT -I: MECHANISM OF ENZYMIC ACTION

UNIT -II: RECOMBINANT DNA AND FERMENTATION TECHNOLOGY

UNIT -III: COENZYMES

UNIT -IV: AMINO ACIDS AND PROTEINS

UNIT -I: MECHANISM OF ENZYMIC ACTION

15 Hrs

Transition state theory. Acid-Base catalysis. Co-valent catalysis— Binding modes of catalysis

(i) Proximity effect (ii) Transition state stabilization (iii) Strain and Distortion. Examples of some typical enzyme mechanisms for (i) Triose phosphate isomerase (ii) α -chymotrypsin and serine protease (iii) Lysozyme (iv) Carboxy peptidase-A (v) Ribonuclease. Synthesis of α - amino acids and peptides. Transformations of lipases and esterases. C-C bond formation: asymmetric cyanohydrin formation and asymmetric aldol condensations using enzymes.

UNIT -II: RECOMBINANT DNA AND FERMENTATION TECHNOLOGY

15 Hrs

Introduction to genetic engineering. Recombinant DNA technology-restriction endonuclease, cloning, linkers, adaptors. Application of recombinant DNA technology in production of pharmaceuticals, diagnosis of diseases, insect control, improved biological detergents, gene therapy-examples. Principles of finger printing technology- Site directed mutagenesis. Fermentation technology: Introduction to fermentation. Industrial fermentation. Advantages and limitations of fermentation. Production of drugs and drug intermediates from fermentation examples. Chiral hydroxy acids, vitamins, amino acids, β -lactam antibiotics. Precursor fermentation and microbial oxidation and reductions.

UNIT -III: COENZYMES

15 Hrs

Introduction. Cofactors — cosubstrates — prosthetic groups. Classification — Vitamin derived coenzymes and metabolite coenzymes. Structure and biological functions of coenzyme A, thiamine pyrophosphate (TPP), pyridoxal phosphate (PLP), oxidized and reduced forms of i) nicotinamide

adenosine dinucleotide / their phosphates (NAD⁺, NADH, NADP⁺, NADPH) ii) Flavin adenine dinucleotide FAD, FADH₂ and iii) Flavin mononucleotide (FMN, FMNH₂), lipoic acid, biotin, tetrahydrofolate. Adenosine triphosphate (ATP) and adenosine diphosphate (ADP), S-adenosyl methionine (SAM) and uridine di phospho sugars (UDP-sugars) Mechanism of reactions catalysed by the above coenzymes.

UNIT: IV: AMINO ACIDS AND PROTEINS

15 Hrs

Amino acids: Introduction - Classification of amino acids. General methods of preparations – Gabriel's phthalimide synthesis, Strecker's synthesis, Malonic ester synthesis Erlenmeyer azalactone synthesis.

Analysis of amino acids from protein hydrolysates. General properties and reactions of amino acids – isoelectric point.

PROTEINS: General nature of proteins – annealing, Biuret reaction, Ninhydrin test. Classification of proteins. Merrified solid phase peptide synthesis. Primary, secondary, tertiary and quaternary structure of proteins.

Recommended Books

1. Concepts in biotechnology by D. Balasubramanian & others
2. Principles of biochemistry by Horton & others.
3. Bioorganic chemistry - A chemical approach to enzyme action by Herman Dugas and Christopher Penney.
4. Chirotechnology by R.Sheldon
5. Organic synthesis in water by Paul A. Grieco Blackie.
6. Burger's medicinal chemistry and drug discovery by Manfred E. Wolf
7. Introduction to Medicinal chemistry by Graham Patrick.
8. Introduction to drug design by R.B.Silverman
9. Comprehensive medicinal chemistry. Vol 1-5 by Hanzsch.

KVR Govt. College for Women (Autonomous)
Re-Accredited by NAAC with 'A' Grade, Kurnool

M.Sc. ORGANIC CHEMISTRY (OC) / NATURAL PRODUCTS (NP)
(Effective from the batch admitted during the academic year 2015-2016)

THIRD SEMESTER ORGANIC CHEMISTRY LAB COURSE
Under CBCS

THIRD SEMESTER LAB COURSE-PRACTICAL-III- (Total Marks 100)

Organic Quantitative Estimations

Estimations:

- i) Estimation of phenol.
- ii) Estimation of Glucose.
- iii) Estimation of Analine.
- iv) Estimation of saponification value of an oil or fat or an ester.
- v) Estimation of acid value of a fat or an oil.

THIRD SEMESTER LAB COURSE-PRACTICAL-IV- (Total Marks 100)

Spectral Identification of Organic Compounds

Spectral Identification of Un-Known Organic Compounds by Interpretation of UV, IR, ^1H NMR, ^{13}C NMR and Mass Spectral Data

Note: A minimum of 30 representative examples should be studied

Recommended Books

1. A text-book of practical organic chemistry by A.I. Vogel, Vol. I and II.
2. Laboratory Manual of Organic Chemistry by B. B. Dey, M. V. Sitaraman Revised by T. R. Govindachari.
3. Unitized experiments in organic chemistry by R.Q. Brewster and others.

4. Practical Organic Chemistry by Mann and Saunders.
5. A textbook of practical organic chemistry by A.I. Vogel, Vol. I and II.
6. Laboratory Manual of Organic Chemistry by B. B. Dey, M. V. Sitaraman Revised by T.
R. Govindachari.
7. Unitized experiments in organic chemistry by R.Q. Brewster and others.
8. Practical Organic Chemistry by Mann and Saunders

KVR Govt. College for Women (Autonomous)
Re-Accredited by NAAC with ‘A’ Grade, Kurnool

M.Sc. ORGANIC CHEMISTRY (OC) IV Semester
(Effective from the batch admitted during the academic year 2015-2016)

S.No	Paper Number	Title of Paper	No. of Credits	Uni. Exam Duration(Hrs)	Total Marks	
					IAE	SEE
1	CHEM-OC: 401:Paper I	Drug & Medicinal Chemistry	4	3	25	75
2	CHEM-OC: 402:Paper II	Terpenoids, Alkaloids Steroids, and Flavonoids (For OC only)	4	3	25	75
3	Practical	Estimations and spectrometric identification of organic compounds	2	3 hrs	-	100
4	Project	To be selected	6	Dissertation	150	
				Viva-Voce	50	
				Total Marks	200	

IA : Internal Assessment = IAE (25) + SS (10) + SA (5)

SEE : Semester End Examination

IAE : Internal Assessment Examination

SS : Student Seminar

SA : Student Attendance

M.A. English
KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL



MA in English - Restructured Course
(Effective from the 2017-2019 Batch)

First Semester

1. Poetry-I (100 marks)
2. Drama-I (100 marks)
3. Novel-I (100 marks)
4. Indian English Literature-I (100 marks)
5. Phonetics and Grammar (100 marks)

Second Semester

1. Poetry-II (100 marks)
2. Drama-II (100 marks)
3. Novel-II (100 marks)
4. Indian English Literature-II (100 marks)
5. American Literature-I (100 marks)

Third Semester

1. Commonwealth Literature-I (100 marks)

2. American Literature-II (100 marks)
3. Indian Literature in English Translation (100 marks)
4. Literary Criticism and Theory-I (100 marks)
5. Introduction to Linguistics (100 marks)

Fourth Semester

1. Commonwealth Literature-II (100 marks)
2. Literary Criticism and Theory-II (100 marks)
3. History of the English Language and ELT (100 marks)

and

PROJECT (200 marks)

[18 papers and one project: 2000 marks]

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL

MA in English - Restructured Course (Effective from the 2017-2019 Batch)

SEMESTER-I PAPER 1.1: POETRY-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Homer	The Iliad, Canto I
2. John Donne	A Valediction Forbidding Mourning

UNIT-II

3. John Milton	Paradise Lost: Book-IX
4. Alexander Pope	The Rape of the Lock

UNIT-III

5. William Wordsworth	Tintern Abbey
	The Tables Turned
6. S.T. Coleridge	The Rime of the Ancient Mariner

UNIT-IV

7. P.B. Shelley	To a Skylark
	Ode to the West Wind
8. John Keats	Ode to a Nightingale
	Ode on a Grecian Urn

PAPER 1.2: DRAMA-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Sophocles Oedipus Rex

UNIT-II

2. Christopher Marlowe Dr. Faustus

UNIT-III 6

3. William Shakespeare Hamlet
4. William Shakespeare Twelfth Night

UNIT-IV

5. William Congreve The Way of the World
6. Oscar Wilde The Importance of Being Earnest

PAPER 1.3: NOVEL-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Henry Fielding	Joseph Andrews

UNIT-II

2. Jane Austen	Pride and Prejudice
3. Charles Dickens	Hard Times

UNIT-III

4. George Eliot	Mill on the Floss

UNIT-IV

5. Thomas Hardy	Tess of the D'Urbervilles
6. Albert Camus	The Outsider (The Stranger)

PAPER 1.4: INDIAN ENGLISH LITERATURE-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1.Toru Dutt

Sita

2.Harindranath Chatopadhyaya The Earthen Goblet

UNIT-II

3. Nissim Ezekiel

Enterprise

Poet, Lover, Birdwatcher

Goodbye Party for Miss Pushpa T.S.

4. A.K. Ramanujan

A River

Small Scale Reflections on a Great House

Obituary

5. Kamala Das

An Introduction

My Grandmother's House

UNIT-III

6. Girish Karnad

Hayavadana

UNIT-IV

7. Rabindranath Tagore The Post office

PAPER 1.5: PHONETICS AND GRAMMAR

UNIT-I

1. The Speech Mechanism
2. English Vowels
3. English Consonants

UNIT-II

4. Word Accent
5. Accent and Rhythm in Connected Speech
5. Phonological Environment: Assimilation, Elision, Juncture
6. Intonation

UNIT-III

The following topics from *A Student's Grammar of the English Language* by

Sidney Greenbaum and Randolph Quirk

Varieties of English (Chapter1)

Some Major Concepts and Categories (Chapter2)

Verbs and Auxiliaries (Chapter3)

UNIT-IV

The following topics from *A Student's Grammar of the English Language* by

Sidney Greenbaum and Randolph Quirk

The Semantics of the Verb Phrase (Chapter 4)

Nouns and Determiners (Chapter5)

The Simple Sentence (Chapter10)

Reference

1. J. Sethi and P.V. Dhamija

A Course in Phonetics and Spoken English

2. Daniel Jones

English Pronouncing Dictionary (18th Edition)
Ed. Peter Roach, Jane Setter, and John Esling

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL

MA in English - Restructured Course

(Effective from the 2017-2019 Batch)

SEMESTER-II

PAPER 2.1: POETRY-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Alfred Tennyson	Ulysses
2. Robert Browning	My Last Duchess

UNIT-II

3. Matthew Arnold	Dover Beach
4. G.M. Hopkins	The Windhover
	Pied Beauty

UNIT-III

5. W.B. Yeats	The Second Coming
	Sailing to Byzantium
6. T.S. Eliot	The Waste Land

UNIT-IV

7. W.H. Auden	The Unknown Citizen
8. Philip Larkin	Church-Going
9. Ted Hughes	The Thought-Fox

PAPER 2.2: DRAMA-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Henrik Ibsen	A Doll's House
2. J.M. Synge	Riders to the Sea

UNIT-II

3. G.B. Shaw	St.Joan

UNIT-III

4. Samuel Beckett	Waiting for Godot
5. John Osborne	Look Back in Anger

UNIT-IV

7. Harold Pinter	The Birthday Party

PAPER 2.3: NOVEL-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. D.H. Lawrence	Sons and Lovers

UNIT-II

2. James Joyce	A Portrait of the Artist as a Young Man
3. Hermann Hesse	Siddhartha

UNIT-III

4. Virginia Woolf	Mrs. Dalloway
5. Graham Greene	The Power and the Glory

UNIT-IV

6. William Golding	Lord of the Flies

PAPER 2.4: INDIAN ENGLISH LITERATURE-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Mulk Raj Anand	Untouchable
2. Raja Rao	The Serpent and the Rope

UNIT-II

3. Salman Rushdie	Midnight's Children
4. R.K. Narayan	A Tiger for Malgudi

UNIT-III

5. Bharati Mukherjee	Jasmine
6. Arundhati Roy	The God of Small Things

UNIT-IV

7. Amitav Ghosh	The Shadow Lines

PAPER 2.5: AMERICAN LITERATURE-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Edgar Allan Poe	The Raven
	The Tell tale Heart
2. Ralph Waldo Emerson	The American Scholar

UNIT-II

3. Mark Twain	The Adventures of Huckleberry Finn

UNIT- III

5. Walt Whitman	When Lilacs Last in the Dooryard Bloom'd
6. Emily Dickinson	I had been hungry all the years
	Because I could not stop for Death

UNIT-IV

7. Ernest Hemingway	The Old Man and the Sea
8. Richard Wright	Native Son

M.Com Commerce

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Semester –I

Paper – CM 101: Managerial Economics

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs.

Objective: To equip the student with the Knowledge of economic concepts, theories, Fundamentals for decision making under environmental constraints

Unit-I: Introduction to Managerial Economics: Nature and scope – Significance of Economics for management –Characteristics of Managerial Economics –Objectives of the Firm - Role and Responsibility of managerial Economist; Fundamental economic Concepts: Incremental principle, opportunity cost principle, Discounting principle and Equi-Marginal principle

Unit-II: Demand and Supply Analysis: Concept – Determinants of Demand –types of Demand – Law of Demand; Elasticity of Demand: -meaning, importance and types of elasticity- Price, income and cross elasticity of Demand- Demand forecasting; Supply: - Law of supply - Determinates of Supply

Unit-III: Cost Analysis: Cost Concepts – Cost classification – Cost Determinants – Cost-output relationships in short run and long run; Cost control and cost reduction: factors Hampering cost control in India

Unit-IV: Production Analysis: Meaning of production function-Laws of Production: – Law of marginal utility - Law of returns to scale and Law of variable proportions – Production function with One, Two and all variable input factors – Cobb Douglas Production function.

Unit-V: Market Structure and Profit Analysis: Market Structure - Perfect Competition, Monopolistic Competition, Monopoly, Price discrimination and Oligopoly – Pricing strategies; Pricing Methods - Product Line Pricing - Transfer Pricing - Export Pricing - Dual Pricing - Administered Pricing – Price determination under different market situation - Theories of Profit-

Reference Books:

1. Petersen and Lewis: Managerial Economics, Pearson/PHI, New Delhi.
2. Managerial Economics, Ahuja. H.L, S. Chand, New Delhi.
3. M.L. Trivedi: Managerial Economics, Tata Mc-Graw Hill, New Delhi 2004.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 102: Business Environment

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs.

Objective: The objective of the course is to familiarize the students with business environment and government policy of the country.

Unit-I: Business Environment: Components and Significance - Nature of Business

Environment - Techniques of Environmental Scanning and Monitoring – Economic and Political, Environment - External Factors Influencing Business Environment – Dimensions of International Business Environment – Challenges - Economic systems.

Unit-II: Cultural and Technological Environment: Elements of Socio – Cultural Environment; Impact on Business – Social Audit - Technological Environment in India; Technology Transfer – Technology Policy.

Unit-III: Liberalization and Globalization: Industrial Policy Resolution 1956 - New Economic policy: economic reforms - liberalization. Globalization: **Meaning** - Stages - factors facilitating and impeding globalization in India - consequences of globalization for India - Fiscal policy - Foreign Trade Policy - Human Development in India..

Unit-IV: Public Sector and Disinvestment: Public sector: Changing role of public sector - relevance of public sector – Public Sector reforms - Disinvestment: concept – Nature – objectives – forms - regulatory framework with reference to different public sector organizations – Concept of Privatization.

Unit-V: Foreign Capital: Foreign Direct investment: policy - trends - problems - consequences – FEMA- objectives - provisions - multinational corporations - entry strategies - role - growth – problems - consequences. Mergers and acquisitions: reasons - trends - advantages and disadvantages - competition law.

Reference Books

1. Francis Cherunilam: Global Economy & Business Environment – Himalaya Publications.
2. Francis Cherunilam: Business Environment - Text and Cases – Himalaya Publications.
3. S.K.Misra&V.K.Puri: Economic Environment of Business - Himalaya Publications.
4. LaxmiNarain: Globalization, Liberalization and Privatization of Public Enterprises – Sultan Chand & Co.
5. S.K.Misra&V.K.Puri: Indian Economy – Himalaya Publications, New Delhi.
6. Aswathappa: Business Environment - Himalaya Publications, New Delhi.
7. Dutt and Sundaram: Indian Economy, Sultan Chand & Co.
8. Ray: Indian Economy, Prentice Hall of India, New Delhi.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 103: Financial Management

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs.

Objective: To provide a comprehensive understanding of financial Management and their application.

Unit-I: Introduction to Financial Management: Meaning –Scope – Finance function- Financial Decisions- Objectives of financial Management-Role of Financial Manager (Theory)
Time value of money: Concept - Rationale of time preference for money- Future Value- Present Value (including Problems)

Unit-II: Investment Decision: (a) Capital Budgeting: Meaning- Important- process-kinds of capital Budgeting Decisions- Techniques of Capital Budgeting: - Traditional Techniques: Pay Back period —Accounting Rate of Return – Discounted Techniques - Improved Payback Period- Net Present Value – Internal Rate of return and Profitability Index- Capital Rationing (including Problems)(b) **Risk Analysis in Capital Budgeting Decision:** Sources and Perspective of Risk – Methods: Risk Adjusted Cut-Off Rate- Certainty Equivalent Method- Sensitivity Techniques- Standard Deviation Method-Co-efficient of Variation Method and Decision Tree Analysis

Unit-III: Financing Decision: Cost of Capital: Meaning and Definition of Cost - Measurement of Specific Cost - Various Sources of Capital - Measurement of Weighted Average Cost of Capital. **Concepts of Leverage** – Meaning – Types- Degree of operating leverage, Degree of financial leverage and Degree of Combined leverage; **Capital Structure:** Meaning -determinate of capital structure – Optimum Capital Structure- Capital Structure theories: Net Income Approach –Net Operating Income Approach –M.M. Hypothesis – Traditional view.

Unit-IV: Dividend Decision: Dividend Policy: - Concept - Types of Dividends -Determinants of Dividend Policy – Forms of Dividends - **Dividend Theories:** Relevance Theories- Walter's model –Gordon's model - Irrelevance Theory - MM Hypothesis (including Problems)

Unit-V: Working Capital Management: Concept of working Capital – determinants of working capital –optimum level of current assets –estimating working capital requirement (Theory)

References Books:

1. Pandey I.M. Financial Management, Vikas Publishing House Limited.
2. Khan, M.Y. and Jain, P.K. Financial Management, Tata McGraw Hill
3. Chandra prasanna: Financial Management, Tata Mc- Graw Hill
4. Hampton. Johni. Financial Decisions-Making: prentice Hill India (p)
5. Maheswari, S.N, Principles of Financial Management, Sultan Chand.
6. Van Horn, James C. Financial Management, Prentice Hall India (p) Ltd.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 104: Human Resource Management

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs.

Objective: The objective of the course is to equip the student with the concepts and skills necessary to manage Human Resources

Unit-I Introduction: Human resource management – concepts - significance – objectives – scope – functions – changing role of Human Resource Manager. Need for studying HRM – Emerging trends in HRM - Human Resource Development (HRD) concept – scope – objectives, - HRD techniques.

Unit-II Human Resource Planning: HRP concept – nature - importance – factors affecting HRM – requisites for successful HRP – Job analysis – methods - purposes – Job description – Job specification - Job evaluation – process and methods of Job evaluation - Job design approaches and process of Job design - factors affecting Job design.

Unit-III Recruitment Selection Training and Development: Recruitment – source of recruitment – factors governing recruitments, and recruitment process. Selection - process – interview- Training methods - evaluating training effectiveness - career planning and career development - career program - advantages and limitations of career development.

Unit-IV Appraising and Managing performance: Performance appraisal system - concept - appraisal methods –challenges of performance appraisal - possible errors in the appraisal process – planning for performance improvement –trends in appraisal system

Unit-V Wage & Salary Administrationand Grievances: Principles - Regulation of wages – Trends in wage and salary administration – Monetary and Non- Monetary incentives to motivate the employees - Grievance - Causes – Procedure – Collective Bargaining - Types - Essential conditions of collective bargaining.

Reference Books:

1. Bohlander: Human Resource Management, Thomson
2. David A.DeCenzo& Stephen P.Robins: Personnel/Human Resource Management, PHI
3. BiswajeetPattanayak: Human Resource Management, PHI
4. Srinivas K. R: Human Resource Management in Practice, PHI.
5. Mathis: Human Resource Management, Thomson
6. Sadri, Jayasree, Ajgaonkar: Geometry of HR, Himalaya
7. SubbaRao P: Personnel and Human Resource Management, Himalaya.
8. VSP Rao: Human Resource Management, Vikas Publishers.
9. Mello: Strategic Human Resource Management, Thomson
10. Gupta CB, Human Resource Management, Sultan Chand & Sons.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 105: Marketing Management

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Objective: The objective of the course is to equip the student with various aspects relating Marketing Management

Unit-I Introduction: Concept of Marketing - Nature and scope- Evaluation- approaches to the study of marketing- Importance - Role of marketing in Indian economy- 4Ps of marketing- Marketing environment- Market segmentation – Concept – Need- Bases for market segmentation.

Unit-II Product and Price Decisions: Concept of product- Classification –Product item- Product line and product mix decisions- New product development – Concept - Factors contributing to new product development - Stages of new product development - Product Life Cycle (PLC) conditions and strategies in different phases- Reasons for the failure- Branding - Packaging and labeling - Pricing –Concept- Objectives -factors influencing pricing- Pricing policies- strategies and methods.

Unit-III Promotion Decision: Concept of promotions and communications, Process of marketing communications - Sales promotion – Significance of sales promotion -Objectives - Planning sales promotion programs- Personal selling – Nature and steps in personal selling - Theories of personal selling – Advertising –Concept- Advertising agencies- Advertising media- Institutional frame work of advertising- Advertising decisions.

Unit-IV Distribution Channels: Concept - Marketing Channels - Nature and significance- Role of middle men in marketing channels - Factors influencing channel selection - Channel levels - Whole sellers and retailers- Concept – Functions – Emerging trends in retailing- Formats of retail stores – Online marketing.

Unit-V Marketing of Services – Meaning – Factors influencing marketing services classification service marketing model – Marketing Social responsibility – Business and society legal issues facing marketing management – Ethics in marketing.

Reference books:

1. Philip Kotler, Principles of Marketing, PHI.
2. Rama Swamy&Namakumari, Marketing Management.
3. RajanSaxena, Marketing Management.
4. R.L.Varshney& S.L. Gupta, Marketing Management Text &Cases, Sultan Chand &Sons.
5. Arun Kumar, N. Meenakshi, Marketing Management, Vikas Publications.

Jain, Marketing Planning and Strategy

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 106: Computer Applications in Business

Internal Marks: 30 External Marks: 70 No. of Hours per Week:5 Exam Duration: 3Hrs

Objective: The objective of this course is to provide an understanding of computers, computer operating system and application of relevant software in managerial decision-making.

Unit-I: Introducing Computer Systems: Computers - History of Computers- Types of Computers – Computer Hardware and Software –I/O Devices – Storage Devices – Peripheral Devices.

Unit-II: Operating Systems: Operating System – DOS – MS. Windows – Application Software –Programming Languages – Computer applications.

Unit-III: MS-Office Essentials: MS-Word: Word Processing Software -Working with the Word Document- Formatting Text Paragraph, Page – Mail Merge. **MS-Power Point:** Creating a Presentation, Working with Graphics Animations - Presenting Slide Shows.

Unit-IV: Introduction to Statistical Packages: MS-Excel: Working with a Spreadsheet - Sorting Rows and Columns- Arithmetic Calculations- Formatting Cells- Charts generation.

SPSS: Introduction, Data Entry, Storing and Retrieving Data Files, the Statistics Menus, the Output Viewer, the Chart Editor, Programming in SPSS.

Unit-V: Internet and World Wide Web: LAN, WAN, MAN, Intranet, Browser, Internet, WWW, E-Mail, Searching and accessing data from Websites.

Reference Books:

1. Peter Norton, Introduction to Computers, McGraw Hill, New Delhi.
2. A Handbook of Statistical Analyses Using SPSS, Sabine Landau & Brian S. Everett, Publisher: Chapman & Hall/CRC Press LLC.
3. Tally Wings Financial Accounting Packages- Manuals
4. Computer for Everyone. Vikas publications.
5. Suresh Basandra, Computer Today, Galgotia Publications

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Semester –II

Paper – CM 201: Management Theory & Organization Behaviour

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Objective: The objective of this course is to know the Management Concepts, and Organizational Behavioral aspects in moving with different individuals and groups in organizations.

Unit-I: Introduction of Management: Managerial Roles – Functions of Management – Classical theory – Scientific Management - Administrative theory – Behavioral Theory – Management Science – Socio – technical theory – Contingency theory – Comparing theories - Contemporary issues in Management.

Unit-II: Planning and Organizing: Principles of Planning – Objectives of planning – Planning process – Types of plans – Principles of organizing – Organization levels – Organizational designs and Structure – Line and staff organizations – Delegation of authority – Factors affecting delegation of authority – Span of management – Centralization and decentralization of Authority.

Unit-III: Directing and Controlling: Significance and Principles of Coordination– Leadership behavior and styles – Leadership in cross cultural environment - Theories of Leadership: Traits – Behavioral Model (Managerial Grid) – Contingency (Fielder, Path goal, Tri-dimensional – Inspirational approaches - Controlling process – Requirements of effective control – Controlling techniques.

Unit-IV: Motivation, Morale and Culture: **Motivation:** Theories of Motivation – Motivational Processes - Content Theories (Maslow, Herzberg, Mc Clelland) – Process Theories (Adam, Victor, Vroom and Lawler and Porter) – Learning and Reinforcement Theory. **Morale:** Factors influencing Morale. **Organizational Culture:** Concepts – Forming a Culture – Sustaining a Culture – Changing a Culture.

Unit-V: Understanding Individual and Group Behaviour: Individual Behaviour: Personality Determinants – Big five Personality factors – Learning Theories. The Perceptual Process – Factors influencing perception – Internal & External; Attitudes and Behaviour- Attitude Formation and Attitude Change - **Group Behaviour:** Fundamentals of Groups – Stages of Development- Important Factors influencing Team Effectiveness – Cohesiveness – Norms – Decision Making.

Reference Books:

1. Robins Stephen and Judge: Organizational Behavior, PHI, New Delhi.
2. Greenberg and Baron: Behaviour in Organization.
3. Daft: Organization Theory and Design, Thomson;
4. Fred Luthans: Organizational Behavior, Me Graw Hill, New Delhi.
5. Nelson: Organizational Behaviour, Thomson Publications, New Delhi.
6. Aswathappa: Organizational Behavior, Himalaya Publishers, New Delhi.
7. Jones G R: Organizational Theory, Pearson Education, New Delhi;

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 202: Entrepreneurship Development

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Objective: The objective of this course is to know the qualities of an entrepreneurship and also how to start the enterprise and the role of government to develop the entrepreneurship.

Unit-I: Entrepreneurship: Importance, Characteristics and Qualities of Entrepreneurship; Entrepreneurial; Role of Entrepreneurship, Ethics and Social Responsibilities - Myths about Entrepreneurship- Entrepreneur Vs Intrapreneur- Management Vs Entrepreneurship - Women Entrepreneurship – Role and Importance -Problems of Women Entrepreneurs, Women Entrepreneurship Development in India.

Unit-II: Idea Generation and Opportunity Assessment: Importance of Ideas in entrepreneurship- Sources of New Ideas – Techniques for generating ideas- Steps in assessing business potential of an idea- Opportunity Recognition- sources and process- Steps in tapping opportunity.

Unit-III: Role of Government: Role of IDBI, NIESBUD, SISI, DIC Financial Institutions Commercial Banks, Entrepreneurial Development Institutes - Institutions Supporting Small Business Enterprises- KVIC; SIDO; NSIC Ltd; National Productivity Council (NPC); EDII - State level Institutions- DIC- SFC-SSIDC- Industry Associations- CII ; FICCI; ASSOCHAM.

Unit-IV: Project Formulation and Appraisal: Meaning and significance of Project Report - Content; Guidelines for Report preparation- Project Appraisal- Methods-Economic Analysis; Financial Analysis; Market Analysis; Technical Feasibility- Sources of Finance-Term loans and Short term Finance.

Unit-V: Government Policy and Taxation Benefits: Government Policy for SSIs- Need for tax benefits- Tax Holiday; Rehabilitation allowance ; Investment Allowance; Tax concessions for SSIs in Rural and Backward areas.

Suggested Books:

- 1.NVR Naidu &T. Krishna Rao, Management & Entrepreneurship, IK Int. Pub House, ND.
2. S Anil Kumar, Small Business and Entrepreneurship, IK Int. Pub. House, New Delhi
3. Balraj Singh, Entrepreneurship Development, Wisdom, Delhi
4. Timmons and Spinelli, New Venture Creation: Entrepreneurship for 21st Century, TMH.
5. Tabarrok – Entrepreneurial Economics, Oxford University Press.
6. C.V. Bakshi, Entrepreneurship Development, Excel Publications.
7. Jain, Hand Book of Entrepreneurs, Oxford University Press.
8. Vasant Desai, Small Business in Entrepreneurship, Himalaya Publishing House.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 203: Cost and Management Accounting

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Unit-I: Management Accounting – Nature and Scope – Management Accounting Vs Financial Accounting and Cost Accounting – Role of Management Accountant in a Modern Organisation.

Unit-II: Cost Concepts for Decision Making - Cost – Volume – Profit Analysis –Behaviour of Variable Cost – Behaviour of Fixed Cost – Relationships Among Cost and Profits at Various Levels of Activity – Break-Even Point – Margin of Safety – Contribution Approach for Decision Making – Analysis of Contribution Per Unit of Critical Factor.

Unit-III: Cost Analysis for Pricing Decisions – Evaluating the cost Effects of Price –Quantity Relationships Price Elasticity of Demand and Optimal Pricing Decisions – Cost Analysis for Pricing During Recession Conditions – Flexible Cost Data for Pricing Decisions– Special Order Pricing – Impact of Special Order Pricing on Regular Sales and Overall Profits – Partial Fulfilment of Special Order Vs. Outsourcing Decisions – Make or Buy Decisions.

Unit-IV: Cost Analysis for Product Decisions – Breakeven Analysis of Multi-Product Firms – Differential Costs for Product – Mix Alterations Decisions – Product Additions Decision – Adding New Products Combining Pricing Decisions with Product Addition Decision and Selecting Profitable Product-Price Strategies – Produce Deletion – Sell or Process Further Decision of Joint and By-Products.

Unit-V: Budgeting – Types of Budgets – Financial Budgets – Operating Budgets – Cash Budget – Production Budget – Flexible Budget – Concepts of Performance Budgeting and Zero-Based Budgeting.

Reference Books:

1. I.M. Pandey: Management Accounting, Vikas Publishing House.
2. N.M. Singhvi, Management Accounting: Text and Cases, Prentice Hall of India.
3. T.P. Ghosh: Fundamentals of Management Accounting, Excel Publications.
4. Ravi M. Kishore, Management Accounting, Taxman Publications.
5. ChakrabortyHrishikesh, Management Accountancy, Oxford University Press.
6. Horngren, C.T., Introduction to Management Accounting, Prentice Hall of India.
7. Khan and Jain, Management Accounting, Tata McGraw Hill, Delhi.
8. J.C. Varshney, Financial and Management Accounting, Wisdom Publication.
9. Horngren Sunder Stratton, Management Accounting, Prentice Hall of India.
10. Paresh P. Shah, Management Accounting, Wiley India, New Delhi.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 204: Taxation

Internal Marks: 30 External Marks: 70 No. of Hours per Week:5 Exam Duration: 3Hrs

Unit-I: Income Tax Act 1961: Basic Concepts, Income, Agricultural Income –Residential Status and Incidence of Tax - Incomes Exempt from Tax.

Unit-II: Income from Salaries: Chargeability, Deductions, Perquisites, Computation of Salary Income.

Unit-III: Income from House Property, Chargeability, and Computation of Income.

Unit-IV: Income from Business & Professions - Capital Gains and Income from Other Sources – Computation of Total Income.

Unit-V: Clubbing of Income: Set off and Carry forward of Losses, Deductions: (a) Income of other persons included in Assessee's Total Income (b) Aggregation of Income and Set off or Carry Forward of Losses (c) Deductions in computing Total Income (d) Rebates & Reliefs; (e) Applicable Rates of Tax and Tax Liability.

Reference Books:

1. V.K. Singhania&KapilSinghania, Direct Taxes Law and Practice, Taxman Publications.
2. Bhagavati Prasad, Direct Taxes Law and Practice, VishwaPrakashan, New Delhi.
3. DinkarPagare, Income Tax and Practice, Sultan Chand and Sons, New Delhi.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 205: Quantitative Techniques and Business Analytics

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Objective: To make the students familiar with the statistical and mathematical techniques and their applications in business decision making.

Unit-I: Functions: Linear, Quadratic, Logarithmic and Exponential Functions –Permutations and Combinations – Matrices – Solving System of Equations with Matrix Methods – Differentiation and Integration of Simple Functions and their Applications.

Unit-II: Simple Correlation and Regression Analysis – Concept and Applications of Multiple Regressions - Concept of Probability – Probability Rules – Joint and Marginal Probability – Baye’s Theorem – Probability Distributions – Binomial, Poisson, Normal and Exponential Probability Distributions.

Unit-III: Sampling and Sampling Distributions – Estimation – Point and Interval Estimates of Averages and Proportions of Small and Large Samples – Testing Hypothesis – One Sample Test- Tests of Two Samples – Tests of Difference Between Mean and Proportions of Small and Large Samples – Chi-square Test of Independence and Goodness of Fitness –Analysis of Variance.

Unit-IV: Data Analysis: SPSS Applications – Tabulation and Cross Tabulation of Data: Univariate, Bivariate Data Analysis - Multivariate Analysis:Advanced Techniques for Data Analysis: ANOVA, Discriminate Analysis, Factor Analysis, Conjoint Analysis, Multidimensional Scaling and Clustering Techniques, Report Writing.

Unit–V: Business Analytics: Evolution - Business Analytics as Solution for Business Challenges - Master Data Management: Data Warehousing and kinds of Architecture – Data Extraction – Transformation and Up-loading of Data – Data Mining – Meta Data – Data Marts – Concept of Creating Data Marts – Data Integration – Concept of OLTP and OLAP.

Reference Books:

1. K.V. Sivayya and K. SatyaRao, Business Mathematics.
2. R. Selvaraj, Quantitative Techniques, Excel Books, New Delhi.
3. Mishra: Quantitative Techniques for Management, Excel Publications.
4. Shenoy, Sarma and Srivastava, Quantitative Techniques for Management, New Age Int.
5. N.D. Vohra, Quantitative Techniques in Management, Tata McGraw Hill.
6. C.R. Kothari, Quantitative Techniques, Vikas Publishers.
7. Anand Sharma, Quantitative Techniques for Decision Making, Himalaya Publishers, Mumbai.
8. Zameerudding, Khanna and Bhambri, Business Mathematics, Vikas Publishing House.
9. R.N Prasad and SeemaAcharya, “Fundaments of Business Analytics”, Wiley India
10. Pang-Ning Tan, Michael Steinbach & Vipin Kumar, “Introduction to Data Mining”, Pearson.
11. Alex Berson, Stephen Smith & Kurt Thearling, “Building Data Mining Application for CRM”, Tata McGraw Hill, New Delhi.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
Paper – CM 206: Business Communication

Internal Marks: 30 External Marks: 70 No. of Hours per Week: 5 Exam Duration: 3Hrs

Objective: To equip the students with the necessary techniques and skills of communication to inform others, inspire them enlist their activity and willing cooperation in the performance of their jobs.

Unit-I:Business Communication: Formal, informal and semiformal communication – Describing company activities and structures – Describing job responsibilities – Written Communication - Differences between formal and informal writings – Use of formal vocabulary and functional language in business letter writing – Planning effective business letters and responses – e-mail writing skills, call taking etiquette/skills.

Unit-II:Business Information: Completing of Forms - Asking appropriate questions to gather information–Polite phrases of confirmation and communication breakdown- understanding native speaking accents and dialects; Functional language used in making verbal agreements — Effective techniques of making and accepting offers – Efficient written offer making and accepting.

Unit-III:Business Presentations: Basic presentation techniques – Use of information in presenting product features – Explaining technical features for simplification; Giving and interpreting numerical data, Business abbreviations and acronyms - Oral and written conventions for expressing numerical information in English.

Unit-IV:Business Reporting: Effective presentation of oral and written instructions – Presenting and describing company information: Vocabulary of describing graphical and numerical information – Summarizing important information concisely.

Unit-V:Feedback and Evaluation: Giving feedback to others - Use of questions in self-assessment elicitation – Functional language of agreement/disagreement and opinion giving – good/bad feedback – Motivating others – Use of conditionals to discuss future possibilities – Discourse strategies for effective relationship – team building skills.

Reference Books:

1. Jerry C. Wofford, Edwin A. Gerloff and Robert C. Cummins, Organisational Communication – The Key stone of Managerial Effectiveness.
2. McGrath, Basic Managerial Skills for All, 5th ed., Prentice Hall of India.

3. Urmila Rai & S.M. Rai, Business Communication, Himalaya Publishers, Mumbai.
4. Meenakshi Raman – Business Communication, Oxford University Press.
5. Bovee, Thill and Schatzman: Business Communication Today: Pearson Education.
6. Biswajit Das: Business Communication Personality Development, Excel Publications.
7. Parag Diwan: Business Communication, Excel Publications.
8. Lesikar I Flatley, Basic Business Communication, Tata McGraw Hill.
9. Dalmar Fisher, Communication in Organizations, A Jaico Book.
10. Scot Ober, Contemporary Business Communication, Wiley India, New Delhi

2016-17

English

GENERAL ENGLISH SYLLABUS III

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL.

FIRST YEAR ENGLISH FOR B.A/B.Com./B.Sc. COURSES UNDER CBCS

Syllabus with effect from 2016-2017

SEMESTER –III

UNIT - I PROSE

1. M.K.Gandhi- Shyness My Shield(from The Story Of My Experiments With Truth)
2. Stephen Leacock – The Conjuror`s Revenge

UNIT - II POETRY

- 1.Gabriel Okara – Once Upon A Time
- 2.Seamus Heaney - Digging

UNIT - III SHORT STORY

- 1.O.Henry- The Last Leaf
- 2.Shashi Deshpande – The Beloved Charioteer

UNIT - IV ONE ACT PLAY

1. Gurajada Appa Rao- Kanyasulkam,translated by C. Vijaya Sree & T. Vijaya Kumar (Acts I&II)

UNIT- V LANGUAGE ACTIVITY

- 1.Classroom and Laboratory Activities

I) JAM sessions

II) Reporting for the media

III) Expansion of an idea (Proverbs)

Classroom Activity

- i Note - making
- ii Report writing
- iii Letter writing

Telugu

కె.వి.ఆర్. ప్రభుత్వ మహిళా డిగ్రీ కళాశాల (స్వ.ప్ర),కర్నూలు
పార్ట్ - (వి) తెలుగు పాఠ్యాంశాలు (2016- 17)
మూడవ సెమిస్టర్ - పేపరు - 2
ద్వితీయ భాష - సామాన్య తెలుగు పాఠ్యా ప్రణాళిక

1. పద్య భాగము

- ఎ) నన్నయ -- వామనాచారము
- వి) మొల్ల హనుమత్సంధేశము

2. అధునిక కవిత్వం

- 1. హరిజన శతకం - కుసుమ భర్తృన్న
- 2. పెన్నెటి పాట - చిత్తాన విశ్వం
- 3. నిషిద్ధ స్వప్నం - శ్రీ శ్రీ
- 4. అర్థ గీతం - తిలక

3. గద్య భాగం

- 1. తెలుగు భాష - అచార్య గుజ్జర్లమూడి కృపాచారి
- 2. వ్యక్తిత్వ వికాసం - అచార్య రావపాళెం చంద్రశేఖర

4. వ్యాకరణము

అలంకారములు-- ఉపమాఅలంకారము,రూపకాలంకారము,అర్థాంతరార్థాసాఅలంకారము,
దృష్టాంత అలంకారము, అతిశయోక్తి అలంకారము.

5. తేజా రచన

కె.వి.ఆర్. ప్రభుత్వ మహిళా డిగ్రీ కళాశాల (స్వ.ప్ర),కర్నూలు

పార్ట్-2 (వి) తెలుగు పాఠ్యాంశాలు (2016 17)

మూడవ సెమిస్టర్ - పేజరు - 2

దీక్షియ భాష - సామాన్య తెలుగు-అంతర్గత ప్రశ్న పత్రము

1.ఈ శ్రింది పద్యానికి నందర్న సహిత ప్రతిపదార్థ తాత్పర్యమును వ్రాయుము.

1. ఇంతిం తై పటున్ డింత యై మఱియు డా నింతై పభోపిథిపై
నంతై తోయడ మండళాగ్రమున కల్లం తై ప్రభారాళిపై
నంతై చంద్రుని కంత యై శ్రువునిపై నంతై మహర్వాణిపై
నంతై సత్కవచోన్నతుం డగుచు బ్రహ్మాండంత నంవర్తి యై

2. ఈ శ్రింది ప్రశ్నలలో ఒక డానికి సమాధానం వ్రాయుము

పారిజన శతకం సారంశమును తెల్పుము

2. విద్యాన్ విశ్వం కవితా రీతులను వివరించుము

3. ఈ శ్రింది అలంకారాలను గురించి వ్రాయుము

ఉపమాంకారము 2. స్వభావోక్తి అలంకారము

కె.వి.ఆర్. ప్రభుత్వ మహిళా డిగ్రీ కళాశాల (స్వ.ప్ర),కర్నూలు
పార్ట్ - 2(ఏ) తెలుగు పాఠ్యాంశాలు (2016 17)
నాల్గవ సెమిస్టర్ - పేపరు - 2
ద్వితీయ భాష - సామాన్య తెలుగు- పాఠ్యా ప్రణాళిక

1. ప్రాచీన కవిత్వం

1. నంది తిమ్మన	-	నక్క భామ స్వాంతనము
2. విశ్వనాథ	-	వెంగీ క్షేత్రము

2. గద్యభాగము

1. అచార్య చంద్రశేఖర్	-	మాధ్యమాలకు రాయడం
2. పి.వి. నుబ్బారావు	-	అభివ్యక్తి వైపునాట

3. నాటకము
హంసధ్వని

4. సాధారణ వ్యాసాలు

5. భండమృ

కె.వి.ఆర్. ప్రభుత్వ మహిళా డిగ్రీ కళాశాల (స్వ.ప్ర),కర్నూలు
పార్ట్ - 2(ఏ) తెలుగు పాఠ్యాంశాలు (2016 17)
నాల్గవ సెమిస్టర్ - పేపరు - 2
ద్వితీయ భాష - సామాన్య తెలుగు- అంతర్గత ప్రశ్న పత్రము

1. ఈ శ్రింధి వద్యానికి నందర్న నహిత వ్రతవదార్త తాత్పర్యమును వ్రాయుము.

అన విని వ్రేటుపడ్డ యుర గొంగనయుం ఐతె నేయి బోయ భ
గ్గన దరికొన్న భీషణ హతాశన కీల యనంగ తేచి, హెచ్చిన
కనుబోయి కొంపు తన చెక్కుల గుంకుమ వ్రత భంగ నంజనిత
నవీన కాంతి వెదవల్లగ గడ్డద తిన్న కంఠి యై!

2. ఈ శ్రింధి వ్రళ్ళులలో ఒక దానికి సముధానం వ్రాయుము.

1. పుత్రకలకు రాయడంలో పాటించవలసిన జాగ్రత్తలు ఏవి ?
2. శ్రవణ వైపుణ్య ప్రాధాన్యతను తెల్పుము?

3. ఈ శ్రింధి వాటిని గురించి వ్రాయుము.

1. ఉత్పలమాల
2. చంపకమాల

Hindi

**K.V.R. GOVT. DEGREE COLLEGE FOR WOMEN,
(AUTONOMOUS), KURNOOL.**

Semister - III Syllabus - 2016 - 2017

UNIT - I

1. प्राचीन काव्य : 1. कबीरदास के दोरे (1 to 10)
2. सूरदास के पद (बाललीला वर्णन)
3. तुलसीदास के दोरे (1 to 8)
4. मीराबाई (1 to 2)

UNIT - II

2. हिन्दी साहित्य का इतिहास : 1. भक्तिकाल
2. ज्ञानाश्रयी शाखा
3. कृष्ण भक्ति शाखा

UNIT - III

3. प्रयोजन मूलक हिन्दी : 1. राजभाषा हिन्दी
2. राष्ट्रभाषा हिन्दी
3. हिन्दी सेवा संस्था है

UNIT - IV

4. निबंध : 1. विद्यार्थी और अनुशासन
2. विज्ञान अभिशाप था वरदान
3. पर्यावरण और प्रदूषण
4. दूरदर्शन

**K.V.R. GOVT. DEGREE COLLEGE FOR WOMEN,
(AUTONOMOUS), KURNOOL.**

Semister - IV Syllabus - 2016 - 2017

UNIT - I

1. आधुनिक काव्य : 1. मातृभाषा के प्रति (भारतेन्दु हरिश्चन्द्रो
 2. तोडती पत्थर (निराला)
 3. ठूँठ (बैरागी चौधरी)
 4. मादा भ्रूण - (रजनी तिलक)

UNIT - II

2. हिन्दी साहित्य का इतिहास : 1. छायावाद
 2. हिन्दी कहानी का उद्भव और विकास

UNIT - III

3. Translation : अनुवाद

UNIT - IV

4. Comprehension :

Urdu

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for (B.A./ B.Com. / B.Sc.) U.G. 2016-2017

Under Common Core Scheme in Urdu – CBCS

As per Andhra Pradesh State Council of Higher Education

Second Language – Urdu Paper – III

SEMESTER - III

Prescribed Book: MUNTAKHAB ADAB – II

UNIT – I Dastan – Mir Amman– Bagh-o-Bahar-Aghaz Khisse ka

**UNIT – II Khutoote Ghalib –
Banaam Mir Mehdi Majrooh
Aur Hatim Ali Mehar**

**UNIT – III Masnavi – Ibne Nishati – Phoolbun – Aaghaze Dastan -
21 Sher**

**UNIT – IV Marsiya – Meer Anees – Jab Qata ki masafate shab
aaftab ne (Ibtidayi 6 band musaddas ke)**

**UNIT – V Rubaiyaat
1. Amjad Hyderabadī – ‘ Har cheez ka khona bhi ‘
2. Saghar Jayyedi –‘ Tareef ki meezaan pe tul jate hain**

History



K.V.R. Govt. College for Women (A), Kurnool

B. A. HISTORY

II Year B. A. Programme (UG) Courses — Under CBCS

Semester — III

Paper — III:

LATE MEDIEVAL & COLONIAL HISTORY OF INDIA (1526 to 1857 A. D.)

(History and Culture of India (1526 1857))

UNIT- I	India from 1526 to 1707 A. D.: Emergence of Mughal Empire - Sources, Conditions in India on the eve of Babur's invasion, Brief Summary of Mughal Polity — Sher Shah & Sur Interregnum — Expansion & Consolidation of Mughal Empire — Rise of Marathas & Peshwas.
UNIT- II	Administration, Economy, Society and Cultural Developments under the Mughals Disintegration of Mughal Empire.
UNIT- III	India under Colonial Hegemony : Beginning of European Settlements — Anglo-French Struggle — Policies of Expansion - Subsidiary Alliance & Doctrine of Lapse - Consolidation of British Empire in India up to 1857 A. D.
UNIT- IV	Economic Policies of the British (1757-1857): Land Revenue Settlements — Commercialization of Agriculture — Impact of Industrial Revolution on Indian Industry ; Administration of the Company — Regulating Charter Acts; Cultural & Social Policies: Humanitarian Measures & Spread of Modern Education
UNIT- V	Anti-Colonial Upsurge — Peasant & Tribal Revolts - 1857 Revolt — Causes, Nature & Consequences

References:

1	Bipan Chandra, Modern India
2	Bipan Chandra, Rise and Growth of Economic Nationalism in India
3	C.A. Bayly, Indian Society and the Making of the British Empire
4	Harbans Mukhia, The Mughals of India
5	Irfan Habib, Medieval India: The study of a Civilization
6	L.P. Sharma, The Mughal Empire
7	R.P. Dutt, India Today
8	Sathis Chandra, Essays on Medieval Indian History
9	Tripathi R.P., The Rise & Fall of the Mughal Empire

Project Work:

Students should be asked to identify structures belonging to Mughal period or colonial period and present status.

Make students to create a collage or collection of images related to a topic. Images can be hand drawn, printed, or clipped from a magazine or newspaper



K.V.R. Govt. College for Women (A), Kurnool

B.A. History

II Year B.A. Programme (UG) Courses – Under CBCS

SEMESTER- IV : SYLLABUS

PAPER - IV : SOCIAL REFORM MOVEMENT & FREEDOM STRUGGLE (1820 TO 1947 A.D.) HISTORY AND CULTURE OF INDIA (1857-1947).

UNIT- I	Social. Religious & Self – Respect Movements, Social & Cultural Awakening – Brahma Samaj, Arya Samaj, Theosophical Society, Rama Krishna Mission, Aligarh Movement – Emancipation of Women – Struggle Against Caste: Jyotiba Phule, Narayana Guru, Periyar, Dr. B.R. Ambedkar.
UNIT- II	Growth of Nationalism in the 2 nd Half of 19 th Century – Impact of British Colonial Policies under Viceroy's Rule and the Genesis of Freedom Movement – Birth of Indian National Congress.
UNIT- III	Freedom Struggle from 1885 - 1920 A.D Moderate Phase – Partition of Bengal – Emergence of Militant Nationalism – Swadeshi & Boycott Movement – Home Rule Movement
UNIT- IV	Freedom Struggle from 1920 to 1947 : Gandhiji's Role in the National Movement Revolutionary – Subhas Chandra Bose.
UNIT- V	Muslim League & the Growth of Communalism – Partition of India – Advent of Freedom – Integration of Princely States into Indian Union – Sardar Vallabhai Patel.

References :

1	Anil Seal, Emergence of Indian Nationalism
2	Banerjee, Sekhar, From Plassey to Partition
3	Bayly, C.A., Indian Society and Making of the British Empire
4	Brown, Judith : Gandhi's Rise to Power
5	Chandra, Bipan, et. al India's Struggle for Independence
6	Chatterjee, Jaya, Bengal Divided : Hindu Communalism and Partition 1932-1947
7	Desai, A.R. Social Background to Indian Nationalism
8	Dutt. R.P. India Today
9	Joshi, P.C. Rammohun and the Forces of Modernization in India
10	Sarkar Sumit Modern India 1885 to 1947
11	Stokes, Eric, Peasants and the Raj
12	R.C.Majumdar, The Struggle for Freedom, Bharatiya Vidhya Bhavan Series

Project Works :

As part of Internal Assessment, Project Work may be given on regional or local history related to culture, economy, struggles land relations, cultural institutions and their influence on the society.

They can also be asked to create a play centered on any event in social reform movement or freedom struggle.

Economics

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL.

B.A Economics

II Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2016-17

Semester-III

Paper-III (Core Paper)

Macro Economics-National Income, Employment & Money

Module-1

Meaning, Definition of Macro Economics-Importance of Macro Economics-Difference between Micro & Macro Economics-Paradox of Macro Economics-Limitations

Module-2

National Income-Definitions, Concepts of National Income-Measurement of National Income-Circular flow of income in Two, Three and Four Sector Economy.

Module-3

Classical Theory of Employment-Say's Law of Markets.

Module-4

Keynesian Theory of Employment-Consumption Function-Investment Function-Marginal Efficiency of Capital(MEC)-Concepts of Multiplier and Accelerator.

Module-5

Meaning and Function of Money-Classification of Money-Gresham's Law-RBI Classification of Money. Theories of Money-Fisher's Quantity Theory of Money Cambridge approach(Marshall, Pigou, Robertson & Keynes).

REFERENCES:

1. G.Ackley-"Macro Economics Theory and Policy",Collier Macmillan,1978.
2. E.Shapiro-"Macro Economic Analysis",Galgotia Publications,1999.
3. Central Statistical Organisations-"National Accounts Statistics".
4. R.Dornbush,S.Fisher and R. Startz-"Macro Economics",Tata Mc.Graw Hill,9/e,2004.
5. M.L.Seth-"Macro Economics",Lakshmi Narayana Agarwal,2015.
6. K.P.M. Sundaram-"Money,Banking & International Trade",Sultan Chand,2010.
7. Dillard,D-"The Economics of John Maynard Keynes",Crossby Lockwood & Sons.
8. M.N.Mishra & S.B. Mishra-"Insurance Principles & Practice" S.Chand 2012.
9. Bharathi V.Pathak "The Indian Financial System Markets.Institutions on Services".Pearson 2008.
10. Telugu Academy Publications.

KVR GOVT. COLLEGE FOR WOMEN (A),KURNOOL.

B.A Economics

II Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2016-17

Semester-IV

Paper-IV (Core Paper)

Banking and International Trade

Module-1

Trade Cycles-Meaning & Definition-Phases of a Trade Cycle-Inflation-Definition-Types of Inflation-Causes and Effects of Inflation Measures to Control Inflation.

Module-2

Banking: Meaning & Definition-Function of Commercial Banks-Concept of Credit creation-Functions of RBI-Recent developments in banking sectors.

Module 3

Non-Bank Financial Institutions-Types of NBFIs-Factors contributing to the Growth of NBFIs-Money market-Defects of Indian money market.

Module-4

Concepts of Shares-Debentures-Stock Market-Functions-Primary & Secondary Markets-SEBI-Insurance-Life Insurance and General Insurance.

Module-5

Macro Economic Policy-Fiscal, Monetary and Exchange rate policies
Objectives and Significance-Importance of International Trade-Regional and International Trade-Defining Balance of Trade and Balance of Payment.

REFERENCES:

1. G.Ackley-"Macro Economics Theory and Policy",Collier Macmillan,1978.
2. E.Shapiro-"Macro Economic Analysis",Galgotia Publications,1999.
3. Central Statistical Organisations-"National Accounts Statistics".
4. R.Dornbush,S.Fisher and R. Startz-"Macro Economics",Tata Mc.Graw Hill,9/e,2004.
5. M.L.Seth-"Macro Economics",Lakshmi Narayana Agarwal,2015.
6. K.P.M. Sundaram-"Money,Banking & International Trade",Sultan Chand,2010.
7. Dillard,D-"The Economics of John Maynard Keynes",Crossby Lockwood & Sons.
8. M.N.Mishra & S.B. Mishra-"Insurance Principles & Practice" S.Chand 2012.
9. Bharathi V.Pathak "The Indian Financial System Markets.Institutions on Services".Pearson 2008.
10. D.M. Mithani & G.K. Murthy-"Business Economics",Himalaya Publishing House,2015.
11. M.L.Jhingan-Economic Development-Vikas,2012.
12. G.Omkarnath-Economics-A Primer for India-Orient Blackswan,2012.
13. Agarwal,V.(2010)Macro Economics: Theory and Policy Dorling Kindersley(India) Pvt.Ltd.,New Delhi.
14. Ahuja,H.L.(2012)Macro Economics,Theory and Policy,S.Chand and Company Ltd.,New Delhi.

Political Science

K.V.R. Government College For Women (Autonomous), Kurnool
II YEAR B.A. Political Science
CBCS: SYLLABUS - SEMESTER WISE (2016-17)
Semester-III Paper-III
As per Andhra Pradesh State Council of Higher Education
INDIAN CONSTITUTION (పాఠశాల విద్య)

Unit-1: The Making of the Constitution (రాజ్యాంగం తయారైన విధానం)

1. The ideological legacy of the Indian National Movement on the Constituent Assembly (రాజ్యాంగ పరిషత్తు పై - భారత జాతీయోద్యమం సైద్ధాంతిక వారసత్వం ప్రభావం)
2. The Nature and Composition of the Constituent Assembly రాజ్యాంగ పరిషత్తు నిర్మాణం మరియు స్వభావం

Unit-2: Philosophical Premises of the Indian Constitution (భారత రాజ్యాంగం సైద్ధాంతిక ఘనానుబంధాలు)

1. Preamble: The underlying values of the Indian Constitution రాజ్యాంగ ప్రవచిత మరియు భారత రాజ్యాంగంలోని అంతర్లీన విలువలు
2. Salient features of the Constitution of India (భారత రాజ్యాంగంలోని విశిష్టమైన లక్షణాలు)

Unit-3: Fundamental rights and Directive principles of State Policy (ప్రాథమిక హక్కులు, మరియు ఆదేశిక సూత్రాలు)

1. Individual and Collective Rights: Limitations on the fundamental Rights (ప్రాయుక్త మరియు సామూహిక హక్కులు : ప్రాథమిక హక్కులపై పరిమితులు)
2. Judicial Interpretation of Fundamental Rights (ప్రాథమిక హక్కులు న్యాయస్థానాల వివరణ)
3. The doctrine of 'Basic Structure' of the Constitution: Kesavananda Bharathi Case (రాజ్యాంగ మౌలిక స్వరూప భావన-- కేశవానంద భారతి కేసు)

Unit-4: Indian Federalism (భారత సమాఖ్య వ్యవస్థ)

1. Unitary and Federal features in the Indian Constitution భారత రాజ్యాంగంలోని ఏక కేంద్ర మరియు సమాఖ్య లక్షణములు
2. Tension Areas between the Union and State Governments (కేంద్ర రాష్ట్రాల మధ్య ఉద్భవించే తలచుకాక ఉన్న అంశాలు) Legislative, Administrative and Financial Spheres (కానూన సంబంధ, పరిపాలనపరమైన, ఆర్థిక సంబంధ అంశాలు)

Unit 5 Working of the Indian Constitution (భారత రాజ్యాంగం పనిచేయు విధానము)

1. The Values of the Indian Constitution and Ushering of Social Revolution in India (సామాజిక విప్లవం తీసుకొని రావడంలో భారత రాజ్యాంగంలోని విలువలు)
2. The causes for the Ascendancy of the Executive over legislature and Judiciary; Major Controversies regarding the Amendments to the Constitution (కానూన శాఖ మరియు న్యాయవ్యవస్థలపై కార్యనిర్వాహక వర్గం ఆధిపత్యం పెరగడానికి కారణాలు; దానికి సంబంధించిన రాజ్యాంగ సందర్భాలపై ముఖ్యమైన వివాదాలు)
3. Nature and Role of Higher Judiciary in India; Recent Debates on the mode of appointment of Judges (భారతదేశంలో ఉన్నత న్యాయవ్యవస్థ యొక్క స్వభావం మరియు దాని పాత్ర--; న్యాయమూర్తుల నియామక పద్ధతిపై ఇటీవల సెలెక్టెడ్ వివాదాలపై చర్చ)

Reference books:

1. Granville Austin (1972) The Indian Constitution, Conservatism of a Nation Oxford university Press, New Delhi.
2. Madhav Khosla (2012) The Indian Constitution, Oxford university press, New Delhi
3. Granville Austin (1999) Working a Democratic Constitution: A History of the Indian Experiment, Oxford University Press, New Delhi

4. Zoya Hasan, Siddharth F and Sudhanshu K (Eds) 2002

- India's Living Constitution, Permanent black, New Delhi
5. Fazlul Karim (1998) The Indian Supreme Court and Politics Eastern book co, Lucknow

CBCS: SYLLABUS - SEMESTER WISE (2015N-17)
SECOND YEAR: SEMESTER - IV
B.A. POLITICAL SCIENCE
PAPER-IV (CORE): INDIAN POLITICAL PROCESS

Unit-1: Approaches to Study the Political Processes in India (భారత దేశం లో రాజకీయ ప్రక్రియలు అధ్యయన దృక్పథాలు)

1. Theory of Modernization: Transition from Tradition to Modernity (ఆధునికీకరణ సిద్ధాంతాలు: సాంప్రదాయకత నుండి ఆధునికీకరణ వైపు మార్పు)
2. Marxian Approach: Transition from pre-capitalism to capitalism (మార్క్సిస్టు అధ్యయన దృక్పథం : పూర్వ పెద్దబుడిచారి వ్యవస్థ నుండి పెద్దబుడిచారి వ్యవస్థ వరకు)

Unit-2: Social Structure and Democratic Process (సాంఘిక నిర్మాణాలు మరియు రాజకీయ ప్రక్రియలు)

1. Transition of Caste System: From Hierarchy to Identity: Role of Agency (కుల వ్యవస్థ: వివిధ హోదాల వ్యవస్థ నుండి గుర్తింపు కోసం ప్రయత్నాల వ్యవస్థ దిశగా జరిగే మార్పు విషయం లో - ఏజెన్సీల పాత్ర)
2. Politicisation of Intermediate and Dalit Caste Communities (మధ్యతర మరియు దళిత కులాల, సమాజాల రాజకీయాలు)
3. Evolution of Modernity in India (భారత దేశం లో ఆధునికత పరిణామం)

Unit-3: Religion and Politics (మతం మరియు రాజకీయాలు)

1. Competing Communalisms: Majoritarian and Minoritarian (మతతత్వం లో పోటీ తత్వం మజారిటీ వాదం మరియు మైనారిటీ వాదం)
2. Debates on Secularism; Role of the State towards religion (లోకహదం పై చర్చ : మతం విషయంలో రాజ్యం పాత్ర)

Unit-4: Party and Electoral Processes in India (భారతదేశంలో రాజకీయ పార్టీలు మరియు ఎన్నికల ప్రక్రియ)

1. Electoral Trends of the lok Sabha from 1952 to 2014: From the One Party Congress System to Multi Party Coalitions (భారతదేశంలో లోక్ సభ ఎన్నికల తరుణిముఖాలు 1952 నుండి 2014 వరకు - ఏక పార్టీ వ్యవస్థ నుండి బహు పార్టీ సుతీర్ణ రాజకీయాల వరకు)
2. Determinants of Voting Behavior in India; Caste, Class, Patronage, Money etc. (కుటుంబ ప్రవర్తనను ప్రభావితం చేసే కారకాలు - కులం, వర్గం, డబ్బు మొదలగునవి)
3. Evolution of Party System in India: the Ideology and Social bases of major Political Parties: INC, BJP, CPM, DMK, BSP, TDP (భారతదేశంలో రాజకీయ పార్టీ వ్యవస్థ పరిణామం, వివిధ రాజకీయ పార్టీ సిద్ధాంతాలు, సమాజం లోని వాటి పునాదులు - భారత జాతీయ కాంగ్రెస్, భారతీయ జనతా పార్టీ, CPM, DMK, BSP, తిరుగు దేశం పార్టీ)

Reference books:

1. Chandheke N and Priyadarsini P (Eds) (2009) Contemporary India (Economy, society, politics, Pearson, New Delhi.
2. Varshik A and Bhargava R (Eds) (2010) Understanding Contemporary India Critical perspectives orient black swan New Delhi.
3. Jajal N G and Mehra P (Eds) (2010) Oxford Companion to Indian Politics Oxford University Press, New Delhi.
4. Kohliat and Prerna Singh (Ed) (2013) Routledge Hand book of Indian Politics Routledge, New York.
5. Jaffrelot C (2003) India's Silent Revolution: The Rise of the Lower Caste in North India, C Hurst, London.
6. Stanley A. Kochanek, Robert L. Hardgrave, India Government and Politics in a Developing Nation, Boston, Wadsworth Publishing, 2005N.
7. Rajneiv Bhargava (Ed) Secularism and its Critics (1998), Delhi, UP.

INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

Internet Fundamentals and Web Tools

Common for BA / BCom / B Sc / BBA Programmes

III Semester

(30 Hours of Teaching Learning including Lab)

Unit-I :

Fundamentals of Internet : Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers.

Unit-II:

Internet applications: Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the Internet – Introduction to Social Networking: twitter, tumblr, Linkedin, facebook, flickr, skype, yelp, vimeo, yahoo!, google+, youtube, WhatsApp, etc.

Unit-III :

E-mail :Definition of E-mail - Advantages and Disadvantages – UserIds, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management,Email Inner Workings.

Unit IV:

WWW- Web Applications, Web Terminologies, Web Browsers,URL – Components of URL, Searching WWW – Search Engines and Examples

Unit-III :

Basic HTML: Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags –Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

Reference Books :

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e - by Raymond Greenlaw and Ellen Hepp, Publishers : TMH

COMMUNICATION AND SOFTSKILLS -- II

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL

CSS—II FOUNDATION COURSE -- 6

SEMSTER -- III SYLLABUS w.e.f. 2016-2017

1. Pronunciation -- I

Introduction to phonetics

Consonants

Vowels

II. Pronunciation -- II

Syllable

Word Stress

Accent and Rhythm in Connected Speech

III Speaking Skills -- I

Conversation Skills (language functions)

Greetings and Introductions

Asking for /giving instructions and directions

Interview Skills

Presentation Skills

Public Speaking

IV Speaking Skills – II

Role-Play, Debate, Group-Discussion.

V Writing Skills

Spelling, Punctuation, Information Transfer, Tables, Bar – diagrams, Line-graphs,

Pie-diagrams, Flow-Charts, -Diagrams, Pictures

.....

ENTREPRENEURSHIP

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

Syllabus, For all Degree Programmes.

w.e.f. 2015-16 (Revised in April, 2016)

Semester – IV

(Total 30 Hrs)

Unit-I: Entrepreneurship: Entrepreneur characteristics – Classification of Entrepreneurships – Incorporation of Business – Forms of Business organizations – Role of Entrepreneurship in economic development – Start-ups.

Unit-II: Idea Generation and Opportunity Assessment: Ideas in Entrepreneurships – Sources of New Ideas – Techniques for generating ideas – Opportunity Recognition – Steps in tapping opportunities.

Unit-III: Project Formulation and Appraisal : Preparation of Project Report – Content; Guidelines for Report preparation – Project Appraisal techniques – economic – Steps Analysis; Financial Analysis; Market Analysis; Technical Feasibility.

Unit-iv: Institutions Supporting Small Business Enterprises: Central level Institutions: NABARD; SIDBI, NIC, KVIC; SIDIO; NSIC Ltd; etc. – state level Institutions – DICs- SFC- SSIDC- Other financial assistance.

Unit-V: Government Policy and Taxation Benefits: Government Policy for SSIs- tax Incentives and Concessions – Non-tax Concessions – Rehabilitation and Investment Allowances.

Reference Books:

1. Arya Kumar, Entrepreneurship, Pearson, Delhi, 2012.
2. Poornima M.CH., Entrepreneurship Development – Small Business Enterprises, Pearson, Delhi, 2009
3. Michael H. Morris, ET. al., Entrepreneurship and Innovation, Cen gage Learning, New Delhi, 2011
4. Kanishka Bedi, Management and Entrepreneurship, Oxford University Press, Delhi, 2009
5. Anil Kumar, S., ET.al., Entrepreneurship Development, New Age International Publishers, New Delhi, 2011
6. Khanka, SS, Entrepreneurship Development, S. Chand, New Delhi.
7. Peter F. Drucker, Innovation and Entrepreneurship.
8. A.Sahay, M. S. Chhikara, New Vistas of Entrepreneurship: Challenges & Opportunities.

LEADERSHIP EDUCATION

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

Syllabus, For all Degree Programmes.

w.e.f. 2015-16 (Revised in April, 2016)

Semester – IV

(Total 30 Hrs)

1. Organisation – Management – Leadership – Meaning and Significance – Different theories – Trait Theory, Blake & Mountain Theory – Other functions of Management.
2. Behavioral Concepts – Individual Behaviour – Perception – Learning – Attitude Formation and Change – Motivation – Theories of Motivation – Personality Development.
3. Interpersonal Behaviour – Communication – Leadership – Influencing Relations – Transactional Analysis.
4. Group Dynamics – Roles – Morale – Conflict – Groups – Inter-Group Behaviour – Inter-Group Collaboration and Conflict Management.
5. Team Building and Management – Developing team resources – Designing team – Participation and Repercussion – Team building activities.

Reference Books:

1. Fred Luthans, "Organizational Behaviour", Tata McGraw Hill Publishing Co., New Delhi.
2. Robins, Stephen P, "Organisational Behaviour", 9th Edition, Prentice Hall of India, New Delhi.
3. Koontz and O "Donnell", Essentials of Management, Tata McGraw Hill Publishing Co., New Delhi, 2000.
4. Keith Davis, "Human Behaviour at Work", Tata McGraw Hill Publishing Co., New Delhi.
5. Aswathappa, "Organizational Behaviour", Himalaya Publishing House, Mumbai
6. Stoner Freeman, "Management", Prentice Hall of India, New Delhi.

ANALYTICAL SKILLS

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

Syllabus, For all Degree Programmes.

w.e.f. 2015-16 (Revised in April, 2016)

Semester – IV

(Total 30 Hrs)

UNIT – 1

Data Analysis:- The data given in a Table, Graph, Bar Diagram, Pie Chart, Venn diagram or a passage is to be analyzed and the questions pertaining to the data are to be answered.

UNIT – 2

Sequence and Series:- Analogies of numbers and alphabets completion of blank spaces following the pattern in A:b::C: d relationship odd thing out; Missing number in a sequence or a series.

UNIT - 3

Arithmetic ability:- Algebraic operations BODMAS, Fractions, Divisibility rules, LCM&GCD (HCF).

Date, Time and Arrangement Problems: Calendar Problems, Clock Problems, Blood Relationship.

UNIT - 4

Quantitative aptitude:- Averages, Ration and proportion, Problems on ages, Time-distance – speed.

UNIT – 5

Business computations:- Percentages, Profit & loss, Partnership, simple compound interest.

Reference Books:

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.
5. Old question Paper of the exams conducted by (Wipro, TCS, Infosys, Etc) at their recruitment process, source-Internet.

COMMUNICATION SKILLS AND SOFT SKILLS-3 (CSS -3)

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"

COURSE CONTENT(30 hours)

A current axiom is that hard skills will get a person an interview, but soft skills will get that person the job. Unit I of the course is on soft skills, which are absolutely necessary in the global job market. Writing is considered the most difficult of all the skills. Units II to V help the learner improve their writing skills, especially academic/formal writing.

Unit I: Soft Skills

1. Positive Attitude
2. Body Language
3. SWOT/SWOC Analysis
4. Emotional Intelligence
5. Netiquette

Unit II: Paragraph Writing

1. Paragraph Structure
2. Development of Ideas

Unit III: Paraphrasing and Summarizing

1. Elements of Effective Paraphrasing
2. Techniques for Paraphrasing
3. What Makes a Good Summary?
4. Stages of Summarizing

Unit IV: Letter Writing

1. Letter Writing (Formal and Informal)
2. E-correspondence

Unit V:

1. Resume and CV
2. Cover Letter

Advance Urdu

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for B.A. Urdu CBCS 2016-17

As per Andhra Pradesh State Council of Higher Education

Second year Optional Urdu Paper - III

SEMESTER - III

URDU POETRY

Prescribed book : Gowhare Adab by A.P.UrduAcademy

UNIT – I MASNAVI – A portion of Gulzar-e-Naseem

‘Aana tajul mulook ka sehrae tilism se’

UNIT – II GHAZAL – The following Ghazals only:

1. ‘Bas ke dushwar hai har kaam’ by Ghalib

2. ‘Woh adae dilbari ho ke nawae’ by Jigar

3. ‘Jala ke mashale jan hum’ by Majrooh

UNIT – III NAZM

1. ‘Roohe arzi aadam ka isteqbal karti hai’

By Allama Iqbal

2. ‘Sagar ke kinare’ by Maqdoom

UNIT – IV Ghazalgo shora ki sawaneh

1.Ghalib 2.Jigar 3.Majrooh

UNIT – V Nazmgo shora ki sawaneh

1.Allama Iqbal 2. Maqdoom

KVR Govt. College (w) Autonomous Kurnool.
Syllabus for B.A. Urdu CBCS 2016-17
As per Andhra Pradesh State Council of Higher Education
Second year Optional Urdu Paper - IV
SEMESTER - IV
URDU POETRY
Prescribed book : Gowhare Adab by A.P.UrduAcademy

- UNIT – I** **QASEEDA – Ta’aruf**
- UNIT – II** **QASEEDA – Mohsin Kakori (Selected portion)**
 ‘Simte kashi se chala janibe mathura badal’
- UNIT – III** **MARSIYA – Ta’aruf**
- UNIT – IV** **MARSIYA – Meer Anees (Selected portion)**
 ‘Namake khwane takallum hai fasahat meri’
- UNIT – V** **Biography of following poets:**
 1.Mohsin Kakori 2. Meer Anees

Commerce

KVR Govt. College for Women (A), Kurnool

Department of Commerce

BOS

II B.Com (CA) III SEM

Syllabus for the Academic Year – 2016 -17

DSC 1 C - Corporate Accounting

Objectives: To impart the students Knowledge of the concepts of Corporate Accounting Process in India.

Unit-I:

Accounting for Share Capital – Meaning and Definitions of Share - Issue of Shares at Par, Premium and at Discount - Forfeiture and reissue of Shares - Accounting Treatment. (Theory and Problems).

Unit-II: Issue and Redemption of Debentures - – Meaning and Definitions – Types of Debentures - Issue of Debentures at Par, Premium and at Discount - Redemptions of Debentures . (Theory and Problems)

Unit-III: Valuation of Goodwill – Meaning and Definition - Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method. (Theory and Problems)

Unit –IV:

Valuation of Shares: - Valuation of shares - Need for Valuation - Methods of Valuation - Net assets method, Yield basis method, Fair value method.(Theory and Problems)

UNIT – V:

Company Final Accounts: Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using Computers. (Theory and Problems)

Reference Books:

1. Corporate Accounting – Haneef & Mukherji,
2. Corporate Accounting – RL Gupta & Radha swami
3. Corporate Accounting – P.C. Tulsian
4. Advanced Accountancy: Jain and Narang
5. Advanced Accountancy : R.L. Gupta and M.Radhaswamy, S Chand.
6. Advanced Accountancy : Chakraborty
7. Modern Accounting: A. Mukherjee, M. Hanife Volume-II McGraw Hill
8. Accounting standards and Corporate Accounting Practices: T.P. Ghosh Taxman
9. Corporate Accounting: S.N. Maheswari, S.R. Maheswari, Vikas Publishing House.
10. Advanced Accountancy: Arutanandam, Raman, Himalaya Publishing House.
11. Advanced Accounts: M.C. Shukla, T.S. Grewal, S.C. Gupta, S. Chand & Company Ltd.,
12. Management Accounting: Shashi K. Gupta, R.K. Sharma, Kalyani Publishers.

II B.Com (CA) III SEM
Syllabus for the Academic Year – 2016 -17

DSC 2C - Business Statistics

The objective of this paper is to impart knowledge on the application of statistical tools and techniques in business decision-making and interpretation of statistical data.

Unit 1: Introduction to Statistics:

Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation -Diagrammatic and graphic presentation

UNIT – 2: Measures of Central Tendency:

Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode.(Theory and Problems)

Unit 3: Measures of dispersion:

Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation.- .(Theory and Problems)

Unit 4 : Skewness

Meaning and Definitions of Skewness - Meaning and definition of Karl Pearson's and Bowley's Measures of skewness -. .(Theory and Problems)

Unit 5: Measures of Relation:

Meaning and use of correlation – Types of correlation-Karlpearson's correlation coefficient – Spearman's Rank correlation-probable error-Calculation of Correlation. .(Theory and Problems)

Suggested Readings:

1. Business Statistics	Reddy, C.R Deep Publications.
2. Statistics-Problems and Solutions	Kapoor V.K.
3. Fundamentals of Statistics	Elhance.D.N
4. Statistical Methods	Gupta S.P
5. Statistics	Gupta B.N.
6. Fundamentals of Statistics	Gupta S.C
7. Statistics-Theory, Methods and Applications	Sancheti,D.C. &Kapoor V.K
8. Business Statistics	J.K.Sharma
9. Business Statistics	Bharat Jhunjhunwala
10. Business Statistics	R.S.Bharadwaj

DSC 3C - Banking Theory & Practice

Unit-I: Introduction

Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks - Central Banking Vs. Commercial Banking.

Unit-II: Banking Systems

Unit Banking , Branch Banking, Investment Banking- Innovations in banking – E banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs - RTGS.

Unit-III: Banking Development

Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD - EXIM Bank.

Unit-IV: Banker and Customer

Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.

Unit-V: Collecting Banker and Paying Banker

Concepts - Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course – Statutory Protection to Collecting Banker - Responsibilities of Paying Banker - Payment Gateways.

Books for Reference

1. Banking Theory: Law & Practice : K P M Sundram and V L Varsheney
2. Banking Theory, Law and Practice : B. Santhanam; Margam Publications
3. Banking and Financial Systems : Aryasri
4. .Introduction to Banking : Vijaya Raghavan
5. Indian Financial System : M.Y.Khan
6. Indian Financial System : Murthy & Venugopal

KVR Govt. College for Women (A), Kurnool
Department of Commerce
BOS
II B.Com (CA) IV SEM
Syllabus for the Academic Year – 2016 -17
Fourth Semester BCom General / BCom Computer Applications
Business Laws

Unit-I :Contract

Meaning and Definition of Contract-Essential elements of valid Contract -Valid, Void and Voidable Contracts - Indian Contract Act, 1872.

Unit-II : Offer and Acceptance

Definition of Valid Offer, Acceptance and Consideration -Essential elements of a Valid Offer, Acceptance and Consideration.

Unit-III : Capacity of the Parties and Contingent Contract

Rules regarding to Minors contracts - Rules relating to contingent contracts - Different modes of discharge of contracts-Rules relating to remedies to breach of contract.

Unit-IV :Sale of Goods Act 1930

Contract of sale – Sale and agreement to sell – Implied conditions and warranties – Rights of unpaid vendor.

Unit-V: Information & Technology Act, 2000

Provisions and Overview of Act.

Suggested Readings:

J. Jayasankar, Business Laws, Margham Publication. Chennai -17
Kapoor ND, Mercantile Law , Sultan Chand
Balachandram V, Business law Tata
Tulsian , Business Law Tata
PillaiBhagavathi, Business Law ,S.Chand.
Business Laws, Maruthi Publishers

II B.Com (CA) IV SEM
Syllabus for the Academic Year – 2016 -17

DSC 3D - Income Tax

Objective: To equip the students with the working knowledge of Direct and Indirect Taxes in India.

Unit-I

Introduction: Income Tax Law – Basic concepts: Income, Person, Assessee, Assessment year, Agricultural Income, Capital and revenue, Residential status, Income exempt from tax (Theory and problems).

Unit-II

Income from salary: Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C (Theory and problems).

Unit-III

Income from House Property: Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (Theory and problems).

Unit-IV

Income from Business & Profession: Meaning – Definition – Computation of Income from Business and Profession (Theory and problems).

Unit-V

Income from Capital Gains – Income from other sources – (from Individual point of view) – and assessment (Theory and problems).

Reference Books:

Dr. Vinod; K. Singhania; Direct Taxes – Law and Practice, Taxman Publications

B.B. Lal; Direct Taxes; Konark Publications

Dr. Mehrotra and Dr. Goyal; Direct Taxes – Law and Practice; Sahitya Bhavan Publication.

Gaur and Narang; Income Tax, Kalyani Publishers, New Delhi.

Fourth Semester BCom General / BCom Computer Applications

Office Automation Tools

Unit-I: MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II: Formatting options: Different formatting options, change row height, formulae and functions, Functions: Meaning and advantages of functions, different types of functions available in Excel.

Unit-III: Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis

Macro: Meaning and advantages of Macros, creation, editing and deletion of macros - Creating a macro, how to run, how to delete a macro.

Unit-IV: MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. Tables: table creation using design view, table wizard, data sheet view, import table, link table. Forms: The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit- V: Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. Printing Reports: Form and Database Printing. Relational Databases: Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

1. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)
2. EdBott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)
3. Sanjay Saxsena, Microsoft Office, 4. Microsoft Office, BPB Publications

II B.Com (CA) III SEM
Syllabus for the Academic Year – 2016 -17

ENTREPRENEURSHIP (Foundation Course - 5)

Objective: The Objective of this paper is to inculcate the knowledge of entrepreneur skills and need of Women Entrepreneurship.

UNIT I – Introduction: meaning and Definition of Entrepreneur and Entrepreneurship - Characteristics of Entrepreneur – Functions. Women Entrepreneurship – Need and Importance of Women Entrepreneurship – Challenges of Women Entrepreneurs - Role of Women Entrepreneur s in Corporate Sector in India.

UNIT-II –

Financing of Enterprises: Need for Financial Planning, Sources of finance, Capital Structure, Term- Loan, Sources of Short- Term Finance, Capitalization, Venture capital, Export Finance, Institutional Finance To Entrepreneurs, Preparation of Business Plans, Commercial Banks, Other financial institutions like IDBI, IFCI, ICICI, IRBI,LIC,UTI,SFCs, SIDCs, SIDBI, EXIM Bank.

UNIT – III – Project Management: Concept of a project – project classification – project Identification – project formulation – project report- project design – project appraisal – profitability appraisal – project planning.

Suggested Readings

Nandan, H, Fundamentals of Entrepreneurship, Prentice Hall of India, New Delhi.

Vasant Desai, Dynamics of Entrepreneurship Development and Management, Himalaya Publishing House, New Delhi

Thomas, W. Zirmerer, Norman, M. Scarborough, Essentials of Entrepreneurship and Small Business Management, Pearson Education, New Delhi

Madhurima La11, Shiksha Sahai, Entrepreneurship, Excel Rooks, New Delhi

Computer Applications

ANNEXURE - III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

B.A(CA & CE) Three-Year Degree Course (Semester Wise)

Syllabus for IInd Year – IIIrd Semester.

Part – II : COMPUTER APPLICATIONS

Paper III : Google Web Products

No. of Hours Per Week : 03

Max. Marks: 75.

Unit-I : Basics of Web : The Internet and Web defined – Timeline of Internet History – Advantages and disadvantages of Internet, Browser– Text-based and Graphics-based Browsers – Web Terminology – Browser Components

Unit-II : Browser Details: Miscellaneous Browser Details : Cookies, Disk Cache, Plug-ins, Helper Applications, Homepage, JavaScript and Java, Images, Messages and Bookmarks/Favorites – Lynx, Internet Explorer, Navigator, Firefox, Chrome Browsers, etc.

Unit-III : Web, Media and Geo : E-mail with Gmail : Create, Send/Receive, Search, Spam, Trash – Google Drive : Create, share and Delete – Google Search : Web, Image, Video, Books, Photos, News – Google You tube : Video search/download/upload – Google Maps : To View Map and Directions – Google Earth : Explore the world from the computer.

Unit-IV : Documents and Presentations : Google Docs : Open, Edit and Create Documents – Programs on Documents – Google Slides : Open, Edit and Create Presentations – Programs on Presentations.

Unit-V : Spreadsheets and Forms : Google Sheets : Open, Edit and Create Spreadsheets – Programs on Spreadsheets – Google Forms : Open, Edit and Create Forms for Surveys/Tests – Programs on Forms.

Unit-VI : Social media What is Social Media-Classification of Social media-Global Usage-Criticism-Twitter-You tube-Blogs-Face book- LinkedIn, virus and antivirus, configuring firewalls.

Reference Books/Websites :

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e – by Raymond Greenlaw and Ellen Hepp, Publishers : TMH
2. Refer the URL : <https://www.google.co.in/intl/en/about/products>

ANNEXURE - IV

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

B.A(CA&CE)/B.Com Three-Year Degree Course (Semester Wise)

Syllabus for IInd Year – IVth Semester.

Part – II : COMPUTER APPLICATIONS

Paper-IV : Office Automation Tools

No. of Hours Per Week : 03

Max. Marks:75.

Unit-I

MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II

Formatting options: Different formatting options, change row height, formulae and functions

Functions: Meaning and advantages of functions, different types of functions available in Excel.

Unit-III

Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis

Macro: Meaning and advantages of Macros, creation, editing and deletion of macros – Creating a macro, how to run, how to delete a macro.

Unit-IV

MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. **Tables:** table creation using design view, table wizard, datasheet view, import table, link table. **Forms:** The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit- V

Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries.

Unit VI

Export Data: Exporting the data from other Applications(Excel,HTML) **Relational Databases:** Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

- 1.Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)
- 2.Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)
3. Sanjay Saxsena, Microsoft Office, 4.Microsoft Office, BPB Publications

ANNEXURE – VI

LIST OF PRACTICALS

KVR GOVT. COLLEGE (AUTONOMOUS): : KURNOOL **II B.A. CA/CE (Revised syllabus W.E.F.2016- 2017)**

PRACTICAL PAPER: Google Web Products

- 1) Procedure to creation of mail.
- 2) Procedure to create Google Sheets
- 3) Procedure to create Google slides
- 4) Procedure to create Google Drive
- 5) Procedure to create Google documents
- 6) Procedure to create Google forms
- 7) Procedure to upload videos on Youtube.

II B.A. CA/CE /B.Com (Revised syllabus W.E.F.2016- 2017)

Office Automation Tool Life cycle.

- 8) 1) Create a worksheet in excel by accepting serial number, student name, marks in 3 subjects, calculate total average and find out the maximum and minimum marks.
- 9) Create a work sheet in excel to show an employee and salaries as per following conditions:
 - a. D.A is 10% of daily pay.
 - b. H.R.A is 15% of basic salary
 - c. Income tax is 6% of basic salary and calculate gross salary.
- 10) Create a transport reservation with the following description conditions:
 - a. Passenger name not exceed 20 characters with the display message “Please” and enter your name.
 - b. Gender column male or female option in the interaction display request “Select gender please”.
 - c. Set No.>=1 and <=100 with display of message out of range use interactive display request “Enter set number”.
 - d. Class I or II, III to select as T. The amount is 500/- If the class is I is 400/- III is 300/-
- 11) Create a chart using cricket source and cricketers name and the number of runs using column chart and pie chart.
- 12) Create a database using MS-ACCESS with at least 5 records
TABLE1 STRUCTURE: REGISTER NUMBER, NAME, DOB, GENDER, CLASS.
TABLE2 STRUCTURE: REGISTER NUMBER, M1, M2 ,M3, M4, M5, TOTAL.
Maintain the relationship between two tables with REGISTER NUMBER as a Primary Key and answer the following queries:
Show the list of students with the following fields as one query
REGISTER NUMBER, NAME, GENDER, TOTALMARKS.
- 13) Maintain the relationship between above two tables with REGISTER NUMBER as a Primary Key and answer the following reports:
Reports must have following columns
Report1 with REGISTER NUMBER, NAME, MARKS OF ALL SUBJECTS and TOTAL

Report2 with REGISTER NUMBER, TOTAL, PERCENTAGE.

14) Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE: EMP-CODE, EMP-NAME, AGE, GENDER, DOB.

TABLE2 STRUCTURE EMP-CODE, BASIC-PAY.

Maintain the relationship between two tables with EMP-CODE as a Primary Key
generate the following reports:

REPORT1: EMP-CODE, EMP-NAME, BASIC-PAY, DA, HRA, GROSS-SALARY.

REPORT2: EMP-CODE, EMP-NAME, AGE, GENDER, GROSS-SALARY

Communicative English

**K.V.R. GOVERNMENT COLLEGE FOR WOMEN(A)
KURNOOL**

**Second Year Communicative English (CBCS)
Paper – II for B.A courses w.e.f 2015-2016**

(Semester System)

(Syllabus for III and IV Semesters)

Semester - III	Semester – IV
Unit – I : Phonetics (1)Organs of speech (2)English consonants (3)English vowels, Diphthongs (4)Consonant clusters	Unit – I : Phonetics (1)Syllable (2)Word — accent / word stress (3)Intonation (4)Phonetic transcription
Unit – II : Linguistics (1)Language and its characteristics (2)Difference between human communication and animal communication (3)Dialects & Register (4)Morphology and Morpheme	Unit – II : Linguistics (1)Phonology and Phoneme (2)Allomorph and Allophone
Unit – III : Functional English (1)Attention, Greeting, Introduction and parting (2)Request (3)Agreement and Disagreement (4)Asking and giving information (5)Invitation (6)Complaint (7)Suggestion	Unit – III : Functional English (1)Apology (2)Gratitude (3)Convincing / Persuasion (4)Showing sympathy(Expressions for different occasions) (5)Permission (6)Giving Directions (7)Resume — Writing
Unit – IV : Question Tags	Unit – IV : Reading Skills(Skimming, Scanning)
Unit – V : Soft Skills communication skills : 1.Verbal and Nonverbal 2.Emotional skills : personal and interpersonal	Unit – V : Soft Skills communication skills : 1.Thinking skills : critical thinking and creative writing

Advance English

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS) KURNOOL I B.A. ADVANCED ENGLISH SYLLABUS

2016-17

Part II , Semester I Paper –I

Unit –I

History of English Literature : Old English and Middle English Periods.

Unit II

Philology

History and development of English language
(Latin , Greek, French influences , Native resources and
Other influences)

Unit III

Literary forms and terms

Ballad, epic, romance, ode, elegy, pastoral elegy, sonnet,
Mystery/miracle plays, Morality play, Metaphysical conceit

Unit IV

Poetry

John Donne: Death , be not Proud
William Shakespeare- All the World is a Stage

Unit V

Prose

Francis Bacon : Of Studies

Recommended Reference books

1. History of English Literature by W.J.Long
2. A Critical History of English literature by David Daiches (published by Supernova)
3. The Cambridge History of English Literature by Ward and Waller (published by Kessinger)
4. A Glossary of Literary terms by M.H. Abrams (published by Cengage)
5. The Penguin Dictionary of Literary Terms and Literary Theory by J.A. Cuddon (published by Penguin)

KVR GOVT. COLLEGE FOR WOMEN (A),KURNOOL

Advanced English Semester II 2016-17 SYLLABUS

Paper II An Introduction to English Literature II

Unit – I History of English Literature : Renaissance(Elizabethan and Jacobean

15th & 16th Century)

Unit-II Literary Forms and Terms : Simile, metaphor, personification, alliteration, Apostrophe, hyperbole, allegory, allusion, anti-climax, Irony, blank-verse, tragedy, comedy, chronicle play , Masque, comedy of humours, farce.

Unit – III Drama : William Shakespeare “Twelfth Night “

Unit- IV poetry : Thomas Gray: “Elegy written in a Country Churchyard “

Unit - V Prose : John Milton Extract from book IX -
Fall of Adam and Eve

Recommended Reference Books:

- 1 .A History of English Literature by WWilliam J. Long
2. A Critical History of English Literature by David Daiches (Published by Supernova)
3. The Cambridge History of English Literature by ward and Waller (published by Penguin)
4. A Glossary of Literary Terms and Literary AND Literary Theory by J.A.Cuddon
(Published by Penguin)

Rural Development

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

B.A.RURAL DEVELOPMENT

Academic Year 2016-17

Paper-III: Indian Rural Economics Scene

Unit-1

Demographic Structure of Rural India – Trends in Population Growth – Composition of rural Work Force – Overpopulation: Causes and Consequences – Distress Migration – Changes in Rural Occupation Structure.

Unit-2

Development of Agriculture: Green Revolution – Land Reforms – Dry Land Farming – Organic Farming – Non-Pesticide Management – Implications of the Use of Genetically Modified seeds – National Agricultural Crop Insurance Scheme – National Agricultural Policy – Implication of Globalization for Indian Agriculture.

Unit-3

Promotion of Rural Industries and activities allied to Agriculture: Khadi and Village Industries Commission – District Industries Center – Programmes for the Development of Artisans – Promotion of Dairying, Sheep/Goat Rearing, Poultry and Aquaculture.

Unit-4

Rural Infrastructure: Bharat Nirman – Prime Minister's Grameen Sadak Yojana – Rural Infrastructure Development Fund – Provision of Urban Amenities in Rural Area (PUPRA)- Rural Energy : Conventional and Non-conventional sources.

Unit-5

Role of Information and Communication Technology in Rural Development – Technology Missions for Rural Development: Immunization – Drinking Water – Sanitation – Communication – Wasteland Development – Oilseeds and Pulses.

Books and References

- 1.N.I.R.D :Facets of Rural Development in India
- 2.S.C. Jain :Rural Development
- 3.K.Venkata Reddy :Rural Development in India: Poverty and Development, Himalaya Publishing House,Mumbai,2012
- 4.Katar Singh :Rural Development: Principles, Policies & Management
- 5.G.Sreedhar and D.Rajasekhar :Rural Development in India: Strategies and Processes, Concept Publishing House, New Delhi, 2014.
6. Misra & Sarma : Problems and prospects of Rural Development.
7. Vasant Desai : A Study of Rural Economy

Publications of A.P.Telugu Academy

Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

B.A.RURAL DEVELOPMENT

Academic Year 2016-17

Paper-IV: Indian Rural Social Scene

Unit-1

Types of Villages in India – Characteristics of Village Communities – Rural Social Institutions – Family, Marriage and Religion : Role and Functions.

Unit-2

Definition of Caste – Distinction between Caste and Class – Caste system in India – Functions – Emerging trends.

Unit-3

Concept of Social Change – Factors of Social Change: Demographic, Economic, Technological, Cultural – Process of Social Change in India: Sanskritization , Westernization and Modernization.

Unit-4

Major Social Problems: Poverty – Unemployment – Illiteracy – Untouchability – Child Labour – Trafficking of Women.

Unit-5

Social Legislation for Women, Children, Scheduled Castes and Scheduled Tribes and Backward Classes.

Books and References

- 1.Vasnt Desai : Rural Development : Issues & Problems.
2. Chitambar : Rural Sociology.
3. P.C. Deb : Rural Sociology.
- 4.A.R. Desai : Rural Sociology.
5. Katar Singh : Rural Development: Principles, Policies & Management.
6. K.Venkata Reddy : Rural Development in India: Poverty and Development, Himalaya Publishing house, Mumbai,2012
7. G. Sreedhar and D.Rajasekhar : Rural Development in India : Strategies and Processes, Concept Publishing House,New Delhi, 2014.

Publications of A.P.Telugu Academy

Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D.

Advance Telugu

కె.వి.ఆర్. ప్రభుత్వ మహిళా డిగ్రీ కళాశాల (స్వ.ప్ర) కర్నూలు

బి.ఎ. (ఆర్.డి) రెండవ సంవత్సరము

ప్రత్యేక తెలుగు పాఠ్యప్రణాళిక - 2016-17

మూడవ సెమిస్టర్

ప్రాచీన సాహిత్య చరిత్ర

1. ప్రాజ్ఞన్నయ యుగం - సాహిత్య వికాసం, నన్నయ,తిక్కన, ఎర్రన
2. శివ కవి యుగం - నన్నెచోడుడు, పండితారాధ్యుడు పొల్లూర్కి సోమనాథుడు
- 3 .శ్రీనాథ యుగం - పదసాహిత్యం, అన్నమయ్య, మొల్ల
- 4 .ప్రబంధ యుగం - ఆముక్త మాల్యద, మనుచరిత్ర, పాండురంగ మహాత్మ్యం, పారిజాతాపహరణం,రాకహస్తీశ్వర మహాత్మ్యం
- 5 .నాయకరాజుల పాలనలో
సాహిత్యం - యక్షగానాలు, వచన కావ్యాలు
అనేకార్థక కావ్యాలు శతకాలు

కె.వి.ఆర్. ప్రభుత్వ సహిళా డిగ్రీ కళాశాల (స్వ.ప్ర) కర్నూలు

బి.ఎ. (ఆర్.డి) రెండవ సంవత్సరము

ప్రత్యేక తెలుగు పాఠ్యప్రణాళిక - 2016-17

నాల్గవ సెమిస్టర్

ఆధునిక సాహిత్య చరిత్ర

1. ఆధునిక కవిత్వం - గురజాడ, కృష్ణశాస్త్రి, శ్రీశ్రీ, జాషువా
2. నవలాసాహిత్యం - కందుకూరి, ఉన్నవ, గోపిచంద్, రంగనాయకమ్మ
3. నాటకం - ధర్మవరం, రామకృష్ణమచార్యులు, వేదం వేంకటరాయశాస్త్రి
తిరుపతి వేంకట కవులు
4. కథానిక - శ్రీపాద సుబ్రహ్మణ్యశాస్త్రి, మధురాంతకం, రాజారాం,
కనకవర్తి వరలక్ష్మమ్మ
5. సాహిత్యంలో ఉద్యమాలు - ధోరణులు
జాతీయోద్యమం, భావకవిత్వోద్యమం, అభ్యుదయ కవిత్వం, స్త్రీ వాదం, దళితవాదం

Psychology

K.V.R Govt. College (W), Kurnool

(Autonomous)

Degree II B.A. Psychology Curriculum 2016-17

Semester - III

Paper - II SOCIAL PSYCHOLOGY

Time : 3 hours

Marks : 75

Unit - I :- Nature and scope of social Psychology

- Definition, Nature and scope of Social Psychology
- Research methods in Social Psychology - Observation, Survey, field study and Experimental method.

Unit - II :- Social perception and Impression Formation

- Social perception - meaning and factors influencing social perception.
- Attribution - Meaning and Errors in attribution - Impression formation-Techniques of Impression management.

Unit - III :- Socialization

- Definition and goals of Socialisation. Socialisation process.
- Stages of Socialisation. Agencies of socialisation, self concept.

Unit - IV :- Communication

- Definition, Nature and types of communication
- Barriers to effective communication - Rumors and propaganda

Unit - V :- Attitudes

- Definition - Features and formation of attitudes
- Measurement of attitudes - Methods by Likert, Bogardus and Thurstone.

Approved By :

1	V.V.Sesha Reddy	Chairperson BOS	V.V. Seshu
2	Dr. K.Lalitha	University Nominee	K. Lalitha
3	Dr.G.Koteswaralah	Subject Expert	K. Seshu
4	Dr.S.Shamsuddin	Subject Expert	S. Shamsuddin
5	Smt. R. Krishnaveni	Corporate	R. Krishnaveni
6	Miss N. Parvathi	Alumnus	N. Parvathi

K.V.R Govt. College (W), Kurnool

(Autonomous)

Degree II B.A. Psychology Curriculum 2016-17

Semester - IV

Paper - II SOCIAL PSYCHOLOGY

Time : 3 hours

Marks : 75

Unit - I :- PREJUDICE

Prejudice and Discrimination, Origin and causes of Prejudice, Techniques of reducing prejudice.

Unit - II :- AGGRESSION

Definition, Determinants of Human Aggression - Social, Personal and Situational Factors, Theoretical perspectives on Aggression - Biological Perspective, Drive Theories, Social learning Perspective, and General Aggression Model, Prevention and Control of Aggression

Unit - III :- GROUPS AND INDIVIDUALS

Definition and Types of Groups, Functions of Groups : Role, Status, Norms, Cohesiveness; Individual Performance in Groups - Social Facilitation, Social Loafing.

Unit - IV :- LEADERSHIP

Definition, Traits of Leader, Types of Leaders - Autocratic, Democratic and Charismatic Leaders; Classic studies on Leadership

Experiments to be completed in II Year

(out of 23 experiments, 11 Experiments to be completed in II year)

Learning.

1. Insight learning (Step Maze)
2. Trial and Error learning (Finger or Slot Maze)
3. Associative learning (Letter - Digit substitution Test)
4. Bilateral transfer of training (Mirror Drawing / Cap and Ball)
5. Massed versus spaced Learning.
6. Part versus Whole Learning Method
7. Serial Learning - Position Effect
8. Habit Interference Test.

Memory

9. Measuring Retention using recognition method
10. Measuring Retention using Recall method
11. Short term memory for digits
12. Effect of Meaning on Retention
13. Accuracy of testimony

Thinking

14. Problem Solving (Pyramid Puzzle)
15. Mental Set (Luchin Jar problems)

Intelligence

16. Measuring intelligence using Non-Verbal Intelligence test
(Raven's Standard Progressive Matrices)
17. Measuring Intelligence using a performance test
(Alexander Pass along test / Koh's Block Design test)

Social Psychology

18. Sociometry
19. Measuring styles of leadership behaviour
20. Attitude measurement
21. Serial Reproduction of an event
22. Level of aspiration
23. Suggestion (Progressive Weights)

Reference Books :

1. Baron, R.A. & Byrne, D. (2006). Social Psychology; Printice-Hall of India Pvt.Ltd. New Delhi.
2. Baron, R.A., Branscombe, N.R., Byrne, D. & Bharadwaj, G. (2010). Social Psychology; Dorling Kindersley of India Pvt.Ltd.
3. Nageswara Rao, P. Asarani, S. & Swathi, P. (2010). Samaja. Manovignana sastram, Telugu Akademi, Hyderabad.

1	V.V.Sesha Reddy	Chairperson BOS	V.V. Seshu
2	Dr. K.Lalitha	University Nominee	K. Lalitha
3	Dr.G.Koteswaralah	Subject Expert	G. Koteswaralah
4	Dr.S.Shamsuddin	Subject Expert	S. Shamsuddin
5	Smt. P. Krishnaveni	Corporate	P. Krishnaveni
6	Miss N. Parvathi	Alumnus	N. Parvathi

Botany

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

II B.Sc., Botany Syllabus Theory

Paper –III, Semester – III

Title: Plant Taxonomy and Medicinal Botany

Unit. I : Introduction to Plant Taxonomy.

1. Fundamental components of Taxonomy (Identification, Nomenclature, Classification Types and phylogeny)
2. Salient features and comparative account of Bentham and Hooker and Engler and Prantl classification.
3. Role of Chemo Taxonomy and Cyto Taxonomy

Unit. II : Systematic Taxonomy

1. Nomenclature and Taxonomic resources; an introduction to International code of Botanical Nomenclature ; Principles, Rules, and Recommendations.
2. Systematic study and economic importance of plants belonging to the following families – Annonaceae, Capparidaceae, Rutaceae, Apiaceae, Asteraceae, Asclepiadaceae, Lamiaceae, Euphorceae, Orchidaceae and Poaceae.
3. Herbarium Techniques

Unit. III : Medicinal Botany

1. Ethanomedicine : Scope, Interdisciplinary nature , Distinction of Ethanomedicine from Folklore medicine. Out line of Ayurvedha, Sidda, Unani and Homeopathic systems of traditional medicine. Role of AYUSH, NMPB, CIMAP and CDRI.
2. Plants in Primary Health Care: Common Medicinal Plants – Tippateega (*Tinospora cordifolia*), Tulasi (*Ocimum sanctum*), Pippallu (*Piper longum*), Karaka (*Terminalia Chebula*), Kalabanda (*Aloeveera*), Turmeric (*Curcuma longa*)
3. Traditional Medicine vs Modern Medicine: Study of selected plant examples used in traditional medicine as resource (Active principles, structure, usage and pharmacological action) of modern medicine : Aswagandha (*Withania somnifera*), Sarpagandha (*Rauvolfia*)

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

II B.Sc., Botany Syllabus Theory

Paper –IV, Semester – IV

Title: Plant Physiology & Metabolism

Unit. I : Histology:

1. Tissues – Meristematic and permanent tissues (simple and complex)
2. Shoot apical meristem and its histological organization
3. Root apical meristem and its histological organization

Unit. II : Anatomy:

1. Normal secondary growth in dicot stem
2. Anomalous secondary growth in Dracaena, Boerhaavia and Bignonia
3. Wood structure – general account, study of local Timbers Teak, Rosewood, Red sanders and Terminalia tomentosa

Unit. III :Embryology and Palynology :

1. Anther structure, Microsporogenesis, Development of male gametophyte, .
2. Ovules structure and types – Megasporogenesis, development and structure of Embryosac, types
3. Monosporic; Polygonum, Oenothera, Bisporic: Allium, Endymion : Adoxa, Paperomia, Plumbago and Plumbagella
4. Pollination – Pollen pistil interaction: double fertilization
Endosperm – development, types
5. Embryogeny – Dicot (Crucifer) and Monocot (Luzula)
Polyembryony – types, causes, significance (Apomixis)
6. Palynology - principles and applications³

Paper –III, Semester – III
Title: Plant Taxonomy and Medicinal Botany
Practical List

1. Systematic study of families Annonaceae, Brassicaceae, Rutaceae; Lamiaceae, Asteraceae, Asclepiadaceae, Poaceae
2. Demonstration of Herbarium techniques
3. Structure of Pollen grains- Catharanthes, Hibiscus, Acacia, Grass
4. Types of ovules
5. Structure of Endosperms
6. Structure of Embryo
7. Field visits and study of local Flora

Paper –IV, Semester – IV
Title: Plant Physiology & Metabolism
Practical List

1. Osmosis,
2. Plasmolysis
3. Structure of Stomata (Dicot & Monocot)
4. Cobalt chloride experiment
5. Ganong's potometer experiment
6. Effects of temperature on Membrane Permeability
7. Study of mineral deficiency symptoms
8. Paper Chromatography experiment

Zoology

ANNEXURE I

KVR GOVT COLLEGE (W), KURNOOL (Autonomous)

NACC RE- ACCREDITED 'A' GRADE

B.SC. SECOND YEAR SYLLABUS 2016-17

ZOOLOGY SYLLABUS FOR III SEMESTER

ZOOLOGY - PAPER - III

CYTOLOGY, GENETICS AND EVOLUTION

Unit - I

1. Cytology - I

- 1.1 Definition, history, prokaryotic and eukaryotic cells, virus, viroids, mycoplasma
- 1.2 Electron microscopic structure of eukaryotic cell.
- 1.3 Plasma membrane –Different models of plasma membrane.

Unit – II

2. Cell organelles

- 2.1 Structure and functions of Endoplasmic Reticulum
- 2.2 Structure and functions of Golgi apparatus
- 2.3 Structure and functions of Lysosomes
- 2.4 Structure and functions of Ribosomes
- 2.5 Structure and functions of Mitochondria
- 2.6 Nucleus
- 2.7. Chromatin - Structure and significance, Chromosomes - Structure, types, functions

Unit - III

3.1 Genetics - I

- 3.1.1 Mendel's work on transmission on traits
- 3.1.2 Principles of inheritance
- 3.1.3 Incomplete dominance and codominance
- 3.1.4 Lethal alleles, Epistasis, Pleiotropy

Unit - IV

4.1 Genetics - II

- 4.1.1 Sex determination
- 4.1.2 Sex linked inheritance
- 4.1.3 Linkage and crossing over
- 4.1.4 Extra chromosomal inheritance
- 4.1.5 Human karyotyping

Unit - V

5.1 Evolution

5.1.1 Origin of life

5.1.2 Lamarckism, Darwinism, Neo – Darwinism, Hardy-Weinberg Equilibrium.

5.1.3 Variations, isolating mechanisms, natural selection

5.1.4 Types of natural selection (directional, stabilizing, disruptive)

5.1.5 Artificial selection and forces of evolution

5.1.6 Speciation (Allopatric and Sympatric)

5.1.7 Macro evolutionary principles (Example: Darwin's finches)

ANNEXURE II

KVR GOVT COLLEGE (W), KURNOOL (Autonomous)

NACC RE- ACCREDITED 'A' GRADE

B.SC. SECOND YEAR SYLLABUS 2016-17

ZOOLOGY SYLLABUS FOR IV SEMESTER

ZOOLOGY - PAPER - IV

EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY

Unit - I

1.1 Developmental Biology and Embryology

- 1.1.1 Gametogenesis
- 1.1.2 Fertilization
- 1.1.3 Types of eggs
- 1.1.4 Types of cleavages
- 1.2 Development of Frog upto formation of primary germ layers
- 1.3 Formation and functions of Foetal membrane in chick embryo
- 1.4 Development, types and functions of Placenta in mammals

Unit - II

2.1 Physiology - I

- 2.1.1 Elementary study of process of digestion
- 2.1.2 Absorption of digested food
- 2.1.3 Respiration - Pulmonary ventilation, transport of oxygen and carbondioxide
- 2.1.4 Circulation - Structure and functioning of heart, Cardiac cycle
- 2.1.5 Excretion - Structure of nephron, urine formation, counter current mechanism

Unit - III

3.1 Physiology - II

- 3.1.1 Nerve impulse transmission - Resting membrane potential, origin and propagation of action potentials along myelinated and non-myelinated nerve fibers
- 3.1.2 Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction
- 3.1.3 Endocrine glands - Structure, secretions and the functions (of hormones) of pituitary, thyroid, parathyroid, adrenal glands and pancreas
- 3.1.4 Hormonal control of reproduction in a mammal

Unit - IV

4.1 Ecology - I

- 4.1.1 Meaning and scope of Ecology
- 4.1.2 Important abiotic factors of Ecosystem - Temperature, light, water, oxygen and CO₂
- 4.1.3 Nutrient cycles - Nitrogen, carbon and phosphorus

- 4.1.4 Components of Ecosystem (Example:lake), food chains and food web, energy flow in ecosystem

Unit - V

5.1 Ecology - II

- 5.1.1 Habitat and ecological niche

- 5.1.2 Community interactions - Mutualism, commensalism, parasitism, competition, predation

- 5.1.3 Ecological succession

- 5.1.4 Population studies

5.2 Zoogeography

- 5.2.1 Zoogeographical regions

- 5.2.2 Study of physical and faunal peculiarities of Oriental, Australian and Ethiopian regions

KVR GOVT COLLEGE (W), KURNOOL (AUTONOMOUS)
NACC RE- ACCREDITED 'A' GRADE
SECOND YEAR 2016-17
ZOOLOGY PRACTICAL SYLLABUS FOR III SEMESTER
ZOOLOGY - PAPER - III
CYTOLOGY, GENETICS AND EVOLUTION

Periods: 24

Max. Marks: 50

I. Cytology

1. Preparation of temporary slides of Mitotic divisions with onion root tips
2. Observation of various stages of Mitosis and Meiosis with prepared slides
3. Mounting of salivary gland chromosomes of Chironomus

II. Genetics

1. Study of Mendelian inheritance using suitable examples
2. Study of linkage recombination, gene mapping using the data
3. Study of human karyotypes

III. Evolution

1. Study of fossil evidences
2. Study of homology and analogy from suitable specimens and pictures
3. Phylogeny of horse with pictures
4. Darwin's finches (pictures)
5. Visit to natural history museum and submission of report

Chemistry

K.V.R. GOVERNMENT COLLEGE (A), (W),

REACCREDITED WITH 'A' GRADE BY NAAC, KURNOOL

SYLLUBUS: II YEAR B.Sc, - III – SEMESTER (w.e.f. 2016 – 2017)

PAPER – III; INORGANIC CHEMISTRY & ORGANIC CHEMISTRY

INORGANIC CHEMISTRY

30 hrs (2h / w)

UNIT –I

1. Chemistry of d-block elements:

9h

Characteristics of d-block elements with special reference to electronic configuration, variable valence, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states .

2. Theories of bonding in metals:

6h

Metallic properties and its limitations, Valence bond theory, Free electron theory, Explanation of thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors and insulators.

UNIT – II

3. Metal carbonyls:

7h

EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls Of Mn, Fe, Co, Metallocenes (only ferrocene).

4. Chemistry of f-block elements:

8h

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides, separation of lanthanides by ion exchange and solvent extraction methods.

ORGANIC CHEMISTRY

30 h (2h/w)

UNIT – III

1. Halogen compounds

5 h

Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides. Chemical Reactivity, Formation of RMgX, Nucleophilic aliphatic substitution reaction- classification into SN^1 and SN^2 . Energy Profile Diagram of SN^1 and SN^2 reactions. Stereochemistry of SN^1 (**Racemisation**) and SN^2 (Walden Inversion). Explanation of both by taking the example of optically active alkyl halide – 2-bromo butane.

2. Hydroxy compounds

5 h

Nomenclature and classification of hydroxy compounds. Alcohols: Preparation with hydroboration reaction, Grignard synthesis of alcohols. Phenols: Preparation i) from diazonium salt, ii) from aryl sulphonates, iii) from cumene. Physical properties- Hydrogen bonding (intermolecular and intramolecular). Effect of hydrogen bonding on boiling point and solubility in water. Chemical properties: a) acidic nature of Phenol. b) Formation of alkoxides/phenoxides and their reaction with RX. c) Replacement of OH by X using PCl_5 , PCl_3 . d) Dehydration of 2-butanol by concentrated Sulfuric acid. e) Oxidation of alcohols by Jones reagent. c) Special reaction of phenols: Bromination, Kolbe-Schmidt reaction, Riemeier-Tiemann reaction, Fries rearrangement, Azocoupling, Pinacol-Pinacolone rearrangement.

UNIT-IV

Carbonyl compounds

10 h

Nomenclature of aliphatic and aromatic carbonyl compounds, structure of the carbonyl group. Common synthetic methods of Aldehydes and Ketones. Physical properties: Absence of Hydrogen bonding, Keto-enol tautomerism, Reactivity of carbonyl group in aldehydes and ketones. Nucleophilic addition reaction with a) NaHSO_3 , b) HCN , c) NH_2OH , d) PhNHNH_2 , e) 2,4 DNPH, f) Alcohols-formation of hemiacetal and acetal. Base catalysed reactions: a) Aldol, b) Cannizzaro's reaction, c) Perkin reaction, d) Benzoin condensation, e) Haloform reaction, f) Knoevenagel reaction. Oxidation of aldehydes- Baeyer-Villiger oxidation of ketones. Reduction: Clemmensen reduction, Wolf-Kishner reduction, MPV reduction.

UNIT-V

1. Carboxylic acids and derivatives

6 h

Nomenclature, classification and structure of carboxylic acids. Methods of preparation by a) Hydrolysis of nitriles b) Carbonation of Grignard reagents. Special methods of preparation of aromatic acids by a) Oxidation of side chain. b) Hydrolysis by benzotrichlorides. **Physical properties:** Hydrogen bonding, dimeric association. **Chemical properties:** Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation. Hunsdiecker reaction, Schmidt reaction, Arndt-Eistert synthesis, Hell- Volhard- Zelinsky reaction.

2. Active methylene compounds

4 h

Acetoacetic ester: keto-enol tautomerism, preparation by Claisen condensation, Acid hydrolysis and ketonic hydrolysis. Preparation of a) monocarboxylic acids. b) Dicarboxylic acids. c) Reaction with urea

Malonic ester: preparation from acetic acid. **Synthetic applications:** Preparation of a) monocarboxylic acids (propionic acid and n-butyric acid). b) Dicarboxylic acids (succinic acid and adipic acid) c) α,β -unsaturated carboxylic acids (crotonic acid). d) Reaction with urea.

List of Reference Books

1. Selected topics in inorganic chemistry by W.D.Malik, G..D.Tuli,R.D.Madan
2. Inorganic Chemistry J E Huheey, E A Keiter and R L Keiter
3. A Text Book of Organic Chemistry by Bahl and Arun bahl
4. A Text Book of Organic chemistry by I L Finar Vol I
5. Organic chemistry by Bruice
6. Organic chemistry by Clayden
7. Advanced Inorganic chemistry by Gurudeep Raj
8. Basic Inorganic Chemistry by Cotton and Wilkinson
9. Concise Inorganic Chemistry by J.D.Lee

LABORATORY COURSE -III

30 hrs. (2 h / w)

Practical Paper-III Titrimetric analysis and Organic Functional Group Reactions (At the end of Semester-III)

Titrimetric analysis:

25M

1. Determination of Fe (II) using KMnO_4 with oxalic acid as primary standard.
2. Determination of Cu(II) using $\text{Na}_2\text{S}_2\text{O}_3$ with $\text{K}_2\text{Cr}_2\text{O}_7$ as primary standard.

Organic Functional Group Reactions

25M

3. Reactions of the following functional groups present in organic compounds
(at least four) Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids and Amides

ANNEXURE –II
K.V.R. GOVERNMENT COLLEGE (A), (W),
REACCREDITED WITH ‘A’ GRADE BY NAAC, KURNOOL
SYLLUBUS: II YEAR B.Sc, - IV – SEMESTER (w.e.f. 2016 – 2017)
PAPER – IV; SPECTROSCOPY & PHYSICAL CHEMISTRY

60 hrs (4 h / w)

SPECTROSCOPY

30 hrs

(2h / w)

UNIT-I

6h

General features of absorption - Beer-Lambert's law and its limitations, transmittance, Absorbance, and molar absorptivity. Single and double beam spectrophotometers. Application of Beer-Lambert law for quantitative analysis of 1. Chromium in $K_2Cr_2O_7$

2. Manganese in Manganous sulphate

Electronic spectroscopy:

8h

Interaction of electromagnetic radiation with molecules and types of molecular spectra. Energy levels of molecular orbitals (σ , π , n). Selection rules for electronic spectra. Types of electronic transitions in molecules effect of conjugation. Concept of chromophore and auxochrome.

UNIT-II

Infra red spectroscopy

8h

Different Regions in Infrared radiations. Modes of vibrations in diatomic and polyatomic molecules. Characteristic absorption bands of various functional groups. Interpretation of spectra-Alkanes, Aromatic, Alcohols carbonyls, and amines with one example to each.

Proton magnetic resonance spectroscopy (^1H -NMR)

8h

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals - spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone.

PHYSICAL CHEMISTRY

30 hrs (2h / w)

UNIT-III

Dilute solutions

10h

Colligative properties. Raoult's law, relative lowering of vapour pressure, its relation to molecular weight of non-volatile solute. Elevation of boiling point and depression of freezing

point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods of determination. Osmosis, osmotic pressure, experimental determination. Theory of dilute solutions. Determination of molecular weight of non-volatile solute from osmotic pressure. Abnormal Colligative properties- Van't Hoff factor.

UNIT-IV

Electrochemistry-I

10h

Specific conductance, equivalent conductance. Variation of equivalent conductance with dilution. Migration of ions, Kohlrausch's law. Arrhenius theory of electrolyte dissociation and its limitations. Ostwald's dilution law. Debye-Huckel-Onsager's equation for strong electrolytes (elementary treatment only). Definition of transport number, determination by Hittorf's method. Application of conductivity measurements- conductometric titrations.

UNIT-V

1. Electrochemistry-II

4h

Single electrode potential, sign convention, Reversible and irreversible cells Nernst Equation- Reference electrode, Standard Hydrogen electrode, calomel electrode, Indicator electrode, metal – metal ion electrode, Inert electrode, Determination of EMF of cell, Applications of EMF measurements - Potentiometric titrations.

2.Phase rule

6h

Concept of phase, components, degrees of freedom. Thermodynamic Derivation of Gibbs phase rule. Phase equilibrium of one component system - water system. Phase equilibrium of two- component system, solid-liquid equilibrium. Simple eutectic diagram of Pb-Ag system, simple eutectic diagram, desilverisation of lead., NaCl-Water system, Freezing mixtures.

List of Reference Books

1. Spectroscopy by William Kemp
2. Spectroscopy by Pavia
3. Organic Spectroscopy by J. R. Dyer
4. Modern Electrochemistry by J.O. M. Bockris and A.K.N.Reddy
5. Advanced Physical Chemistry by Atkins
- 6.Introduction to Electrochemistry by S. Glasstone
- 7.Elementary organic spectroscopy by Y.R. Sharma
8. Spectroscopy by P.S.Kalsi

LABORATORY COURSE – IV

**Practical Paper - IV Physical Chemistry and IR Spectral Analysis
(at the end of semester IV)**

30 hrs (2 h / W)

Physical Chemistry

25M

1. Critical Solution Temperature- Phenol-Water system
2. Effect of NaCl on critical solution temperature (Phenol-Water system)
3. Determination of concentration of HCl conductometrically using standard NaOH solution.
4. Determination of concentration of acetic acid conductometrically using standard NaOH Solution.

IR Spectral Analysis

25 M

5. IR Spectral Analysis of the following functional groups with examples
 - a) Hydroxyl groups
 - b) Carbonyl groups
 - c) Amino groups d) Aromatic groups

Home Science

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SYLLABUS FOR THE III & IV SEMESTER 2016-18

HSC.301FOOD SCIENCE

THEORY

Unit-IFood- Definition and objectives in the study of food

- Functions of food
- ICMR food group classification
- Factors affecting food selection

Unit-II Food Groups

- Cereals and millets-structure, composition and nutritive value, processing, use in variety of preparations.
- Pulses and legumes: composition and nutritive value
- Nuts and oils seeds: nutritive value, use in cookery
- Vegetables and fruits: classification, nutritional aspect, pigments and enzyme

Unit-III Food Groups

- Meat, fish, poultry and eggs: nutritive value, use in cookery
- Milk and Milk products: nutritive value, use in cookery
- Spices and condiments: nutritive value, use in cookery
- Beverages – classification and role of beverages in our diet

Unit-IV Food Preparation- Importance and objectives

- Methods of cooking
- Effect of cooking on nutritional values and digestibility
- Pressure cooking and microwave cooking.

Unit-V Improving nutritional quality of Food

- Germination, Fermentation, Supplementation, Substitution
- Fortification and enrichment
- Functional food its importance

PRACTICAL

4. Standardization of weights and measures of various food items.
5. Food preparation and understanding the cooking Procedure for different types of food- Cereals, Pulses, Milk, Egg, Fish and Meat, and Vegetable cookery
6. Preparation of Resource File

REFERENCES

- 6.** Bamji MS, Krishnaswamy K, Brahman GNV (2009). Textbook of Human Nutrition, 3rd edition. Oxford and IBH Publishing Co. Pvt. Ltd.
- 7.** Srilakshmi (2010). Food Science, 5th Edition. New Age International Ltd.
- 8.** Wardlaw MG, Insel PM (2004). Perspectives in Nutrition, Sixth Edition, Mosby.
- 9.** Dr. M. Swaminathan Hand Book of Food and Nutrition the Bangalore printing and Publishing Co.Ltd
- 10.** VijayaKhader, Text Book on Food storage and Preservation.

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HSC 302. HOUSING FOR BETTER LIVING

THEORY

Unit-I Introduction to House

- Importance of Housing
- Types of houses
- Functions of a house

Unit II Housing needs in different stages of family lifecycle and economic levels.

- Housing choice - Ownership Versus Renting -Advantages and Disadvantages
- Selection of site

Unit-III Planning of housing

- Principles of Planning and importance of planning space
- Orientation – importance, definitions –Aspect, Prospect, Privacy, Grouping, Roominess, Flexibility, Circulation, Sanitation, Light, Ventilation, Stuffiness, Cleanliness
- Factors to be considered while planning different rooms and ways to attain Good Orientation in Residential Building

Unit-IV Ergonomics in Planning for family living space

- Designing Service Space – Planning for efficient Kitchen, Kitchen layout
- Planning for efficient work centers and storage areas in the kitchen, bathroom, laundry and other areas of the house.
- Practical considerations of Water supply, Electricity, Plumbing, and drainage facilities

Unit-V Housing Finance

- Financial agency – HDFC, LIC and other banks
- State and Central Housing Scheme- HUDCO
- Housing problems, causes and remedial measures.
- Prevention of accidents and safety measures in the home.

PRACTICALS:

7. Learning to read House plan – Identification of Symbols
8. Site plan, Floor plan, Elevation, Perspective view, Land scape plan
9. Drawing house plan for different income groups
10. Drawing different types of Kitchen plan
11. Storage and cupboard design.
12. Preparation of Resource file

REFERENCES

6. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
7. M.N. Joglekar and Neelkamal Sharma, Housing Architectural Details, Hudco publication, New Delhi.

8. Home furnishing by Rett
9. Home management by Gross and Crandle
10. Textbook of Homescience- PremlataMultick

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HSC.303. TEXTILE FIBERS AND FABRIC

THEORY

Unit I Introduction to Textiles

- Classification of Textile fibers and their general properties.
- Polymerization- types of Polymer
- Factors affecting selection of fabric for various uses.

Unit II Textile fibers - Composition, manufacturing process, properties and uses

- Natural cellulosic fibers- Cotton, Flax and Jute.
- Natural Protein fibers- Silk and Wool.
- Synthetic fibers- Rayon, Acrylic, Nylon and Polyester

Unit III Yarns- Definition and types of Yarns

- Simple yarn: Single ply, cord, crepe, staple, filament, balanced, unbalanced, types of twist and effect of twist on fabric performance.
- Complex yarns: Slub, flock/ flack, Bounce/ loop, ratine, loop, knot, grandellechennille.
- Methods of spinning.

Unit IV Method of fabric construction

- Weaving – Definitions, Terms, Basic weaving operation
- Types of weave- Basic and Decorative, Dobby and Jacquard attachment
- Knitting- Types of knit stitches
- Other Methods of fabric construction - netting, knotting, felting, braiding and bonding

Unit V Fabric care.

- Darning and mending.
- Principles and methods of washing and finishing.
- Stain removal - principles, classification and techniques.
- Cleansing agents - water, detergent and soap. Other reagents - acidic and alkaline.
- Bleaching agents. Additives used in laundering - stiffening, blueing and optical brighteners.

PRACTICALS

6. Identification of textile fabrics by- visual, burning, microscopic and chemical tests.
7. Laboratory tests on fabrics- Fabric count and type of weaves.
8. Construction of different types of weaves and collection of their sample.
9. Color fastness to sunlight and washing of various fabrics.
10. Darning and mending of the fabric

REFERENCES:

6. Corbman Textiles- Fiber to Fabric. McGraw Hill.

7. James,W. &Sylvia,C. Crochet. Octopus book limited.
8. Allen,F.(1952)Handbook of Weaving Technology London Sir Issac Pitman. Murphy
9. W.S. Handbook of Weaving. Abhishek Publications, Chandigarh.
10. Majory L. Josheph“Essentials of Textile”

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HSC.401.FOOD PRESERVATION & PROTECTION

THEORY

Unit I Food Spoilage - its causes

- Perishable, semi-perishable and nonperishable foods.
- Factors affecting the growth of micro-organisms in the food.
- Food Sanitation and hygiene- Control and inspection

Unit II Food Preservation-Importance and principles of food preservation

- Methods of food preservation.
- Preservation at low temperature(Refrigeration and freezing)
- Preservation at high temperature(Pasteurization and sterilization)
- Preservatives- use and types
- Canning, Drying and Radiation.

Unit III Food Adulteration

- Food Adulterants-Types and their harmful effects
- Food Adulteration and its household methods of detection.

Unit IV Food Additives – definition and classification.

- General principles in the use of food additives issued by FAO, WHO.

Unit V Food Laws and Standards

- Responsible agencies for safe food.
- Present regulations / orders / standards related to food.
- Food packaging and labeling

PRACTICAL

- Survey of various preserved product and common additives available in the market
- Identification of food adulteration at household level
- Preparation of jams, jellies, pickles, squashes, sauce etc.

REFERENCES

1. B. Srilakshmi, Food Science, New age International (P) Limited, New Delhi.
2. Dr. M. Swaminathan Hand Book of Food and Nutrition the Bangalore printing and Publishing Co.Ltd.
3. VijayaKhader, Text Book on Food storage and Preservation.

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HSC.402 INTERIOR DECORATION

THEORY

Unit II Interior Decoration- Meaning and importance and development of good taste

- Element of design
- Types of design.
- Factors influencing interior design

Unit II Application of elements of art and principles of design

- Elements of art - Line, form, colour, pattern, light, texture, space.
- Colours - classification, colour schemes and their effects.
- Principles of design -Harmony, Balance, Rhythm, Emphasis Scale and Proportion
- Application of art principles and elements of design in improving the appearance of home

Unit III Furniture –Types, Factors to be considered for selection

- Arrangement of furniture in different room
- Care and maintenance of furniture.
- Accessories- Types, Functions and Use of accessories in interior enrichment

Unit IV Flower arrangement

- Principles, selection and different flower arrangement styles.
- Points to be considered while selecting flowers and aids for arranging flowers
- Dry flower arrangement-preserving flowers by different method.

Unit- V Lighting arrangement-Natural and artificial arrangement for different rooms and Activity centers

- Wall, floor and window enrichment
- Table setting - general rules for table setting.
- Table manners and Etiquette.

PRACTICALS

9. Interior Design- Types of Design- Natural, Decorative conventional, Geometric abstract drawing/ painting/ clipping using magazines.
10. Application of principles of art in different rooms
11. Drawing of colour wheel and developing colour schemes.
12. Different types of Flower arrangement
13. Floor decoration – Rangoli and Alpana
14. Preparation & placement of accessories for interior enrichment.
15. Table setting-Indian and western
16. Preparation of Resource file

REFERENCES:

5. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
6. Art in Everyday Life - Harriet Goldstein Mac Millan Co. New York.
7. Colour Trends- Vol. I, Ethnic, Japanese, High- Tech Colors, AIM Creative Products Pvt. Ltd.
8. Colour- A guide to basic facts and concepts, John Wiley & Sons, New York.

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HSC.403 CLOTHING CONSTRUCTION

THEORY

Unit I Introduction - Importance and functions of clothing.

- Clothing construction - introduction, terminology and principles.
- Equipment and accessories used in construction.
- Sewing machine - parts, functions, care, maintenance, problems and general repair.

UNIT II Stitches – classification, hand and machine stitches

- Types of seams- plain, flat, ridge, decorative
- Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, mitering, trimming a corner
- Raw edge finishes, Fullness and ease

UNIT III Methods of garment construction suitable for different fabrics –

- Pattern making -Importance, Terminology used in Pattern making
- Methods of pattern making -Flat pattern, Drafting, Draping and Grading
- Rules of pattern making
- Pivotal point & style reading
- Fitting- principles of good fit, various fitting problems and its remedies

UNIT IV Preparation of fabric for cutting, layouts

- Fabric grain
- Preparatory steps-preshrinking, straightening & truing
- Layouts for patterns- general guidelines, basic layouts-lengthwise, partial lengthwise, crosswise, double fold, open, combination fold, Pinning, marking, cutting
- Layout for special fabrics- unidirectional, bold & large prints, plaids, stripes & checks
- Fabric widths & calculation of material required

UNIT V. Clothing – functions,

- Factors considered in selection of fabrics
- Family Clothing&household linen - selection for men, women, college going and children, carpets and upholstery etc.
- Selection of Ready- made garments and their evaluation
- Planning wardrobe

PRACTICAL

7. Sewing Machine description, use, care and repairs
8. Sewing equipment and Accessories
 - Simple Construction Techniques-Basic, Decorative and Embroidery Stitches
 - Seam and seam finishes, Neck line finishes, Plackets, Pockets and Sleeves
 - Fullness- Disposal of fullness- Dart, Gathers, Pleats, Tucks and Flare
 - Fasteners: Hook and eye, press button, Velcro, button.
9. Taking body measurements and preparing basic bodice block
10. Drafting, cutting, stitching and finishing a baby layette (zabala, nappy, bib or feeder)
11. Drafting, cutting, stitching and finishing of frock

12. Adaptation of bodice block into apron

REFERENCES:

6. Lewis 'comparative clothing construction Techniques.'
7. ShobenAumstrong 'Pattern cutting and making up'
8. Gohl EPG &Vilensky L.D. 'Textile Science' CBS publishers &Distributor, Delhi.
9. NatalliaBrary, 'More Dress pattern Designing'
10. Erwin Marbel D. clothing for moderns.

Paper V-FOUNDATION OF FABRIC AND APPAREL CONSTRUCTION

Theory - 4 lec / week

Practical - 3 hrs/week

Theory- 100 marks

Practical-50 marks

Objectives

1. To familiarize the students with terminology related to textiles and apparel.
2. To know Production, Properties, Use and Care of the different fabric
3. To introduce the basic methods of Apparel construction

THEORY

UNIT-1 Introduction to Textiles fiber: Importance of study of textiles to the consumer

- Fibers – definition
- Polymerization
- Primary Properties of fiber
- Secondary Properties
- Classification of Textile fibers

UNIT-2.A brief study of Classification, Production, Properties, Use and Care of the following fibers:

- a) Natural cellulosic vegetable fibers – cotton, linen
- b) Natural protein animal fibers-wool, silk
- c) Man made fibers – Rayon and acetate
- d) Synthetic fibers-Nylon, Polyester
- e) Mineral fibers- glass, asbestos and metallic fibers
- f) Mixtures and blends

UNIT-3 Yarn construction

- Types of Yarn - spun/filamentous, Mono/ multi, single/ply/ cord
- Yarn twist – types
- Yarn numbering system
- Yarn Manufacturing -Spinning- Mechanical and Chemical spinning
- Classification of yarn, their properties and uses
 - 1) simple, 2) novelty 3) bulk and textured yarn

UNIT-4 Fabric Constructions

- Weaving – Definitions, Terms, Basic weaving operation
- Types of weave- Basic and Decorative, Dobby and Jacquard attachment
- Knitting-Types of knit stitches
- Non -Woven - Felting, Bonded, Braiding and Nett

UNIT -5. Fundamentals of fabric Construction

- Sewing Machine description, use, care and repairs

- Sewing equipment and Accessories -French curve, Hip curve, L- square, Pattern making paper etc.
- Introduction to different fabric term- Muslin, Grain, Selvage, Bowing and Skewing,Dart, dart legs, dart intake, trueing and blending, plumb line, vertical lines, horizontal lines, perpendicular lines, symmetric and asymmetric lines, style number, pattern size.

UNIT-6.Pattern Making- Concepts and Terms –Notch, Bust point, Dart, Dart intake, Trueing, Blending, Pin marking, Tape marking

- Methods of pattern making -Flat pattern, Drafting, Draping and Grading
- Pivotal point & style reading
- Fitting- principles of good fit, various fitting problems and its remedies.

UNIT 7.Preparation of Fabric for Garment Construction

- Fabric preparation- Straightening, Shrinking, Pressing
- Taking body measurement

Unit 8.Stiches- Basic and Decorative Stitches

- Seam Finishes -Types of seam and suitability for different fabrics,
- Fullness -Reasons for introducing fullness s
- Types of fullness- darts, pleats, tucks, flares, gusset, gathers and shirrs, frills and ruffles
- Neckline finishes – Types of collars
- Plackets, Pockets, Sleeves

PRACTICALS

UNIT 1. Textile chemistry

1. Fiber identification- Physical, microscopic, burning and chemical test.
2. Weave identification
3. Fabric identification

UNIT 2.Clothing construction

1. Sewing Machine description, use, care and repairs
2. Sewing equipment and Accessories
3. Simple Construction Techniques
 - Basic, Decorative and Embroidery Stitches
 - Seam and seam finishes
 - Neck line finishes
 - Plackets, Pockets and Sleeves
 - Fullness- Disposal of fullness- Dart, Gathers, Pleats, Tucks and Flare
 - Fasteners: Hook and eye, press button, velcro, button.

UNIT- 3. Fabric Construction

1. Preparation of Fabric for Garment Construction
2. Construction of Sari Petticoat,House coat and Frock
3. Market survey to see the availability of different yarns and fabrics of different weaves.

References:

1. Introductory Textile Science, M L Joseph
2. Textile fabrics and their selection, Isabel B Wingate and June F Mohler
3. Textiles by Hollen Saddler- Macmillian publishing company, New York
4. Understanding Textiles by P S Tortora-Prentice Hall Inc., New Jersey
5. Fiber to fabric by Corbman.
6. Text Book of clothing Textiles and Laundry, Sushma Gupta, NeeruGarg, RenuSaini

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Paper VI: HOUSING AND INTERIOR DECORATION

Theory - 4 lec / week

Theory- 100 marks

Practical -3 hrs/week

Practical-50 marks

Learning Objectives

1. To learn about various aspects of Housing and Interior Decoration
2. To learn application of Ergonomic principle in planning family life space
3. To know about care and maintenance of house

THEORY

Unit-1 Introduction to Housing

- Importance of Housing and types of houses
- Functions of a house – Its influence on health and family living.
- Housing needs in different stages of family lifecycle and economic levels.
- Housing choice - Ownership Versus Renting-Advantages and Disadvantages
- Selection of site- Importance, Factors influencing the selection of Site

Unit-2 Building Plan for Family Living

- Principles of Planning and importance of planning space
- Orientation – importance, definitions – Aspect, Prospect, Privacy, Grouping, Roominess, Flexibility, Circulation, Sanitation, Light, Ventilation, Stuffiness, Cleanliness
- Factors to be considered while planning different rooms and ways to attain Good Orientation in Residential Building
- Designing Circulation Spaces - Staircase, Elevator / Lift, Hallways / Corridors, Driveways and Walkways
- Practical considerations of Water supply, Electricity, Plumbing, and drainage facilities.

Unit-3 Ergonomics in Planning for family life space

- Ergonomics - Meaning and Significance, aspects of ergonomics
- Application of ergonomic principles in planning life space - Factors and practical consideration
- Designing Service Space – Kitchen, Planning for efficient Kitchen, Kitchen layout
- Planning for efficient work centers and storage areas in the kitchen, bathroom, laundry and other areas of the house.

Unit-4 Interior Decoration- Meaning and importance and development of good taste

- Element of design- Line, form, colour, texture and lighting.
- Types of design.
- Art principles – Harmony, Balance, Rhythm, Emphasis and proportions – Application of art principles and elements of design in improving the appearance of home.

- Principle for table setting

Unit-5Furnishing and Accessories -Types and functions.

- Factors to be considered for selection and arrangement of furniture
- Interior and exterior fitting and fixture- type and importance

Unit-6 Flower arrangement – Shapes, Styles, techniques- Ikebana, Dry material, Bonsai,

- Points to be considered while selecting flowers and aids (containers, Holders, Mesh, Scissors, tape etc.,) for arranging flowers
- Dry flower arrangement-preserving flowers (both fresh and dry) bydifferentmethod.

Unit-7 Household Equipment's

- Brief Study of Equipment in Indian House- Important electrical and non-electrical energy saving appliances- Refrigerator, Vaccum cleaner, washing machine, mixer andgrinder, toaster
- Smokeless chullah and Biogas- importance, construction and principle
- Factors to be considered for choice and purchase of equipment's

Unit- 8 Care and Maintenance House

- Cleaning and care of metals and non-metals
- Eradication of household pests
- Prevention of accidents and safety measure in home

PRACTICALS

Unit 1. Housing

1. Learning to read House plan – Identification of Symbols
 - Site plan
 - Floor plan
 - Elevation
 - Perspective view
 - Land scape plan
2. Drawing house plan for different income groups
3. Drawing different types of Kitchen plan

Unit 2. Interior Decoration

1. Drawing Different design using Art Principle
2. Colour- Painting Prang Color chart
3. Principle of Table setting-Indian and western
4. Flower arrangement
5. Furniture arrangement
6. Preparation of Resource file

REFERENCE BOOKS

11. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
12. M.N. Joglekar and Neelkamal Sharma, Housing Architectural Details, Hudco publication, New Delhi.
13. Art in Everyday Life - Harriet Goldstein Mac Millan Co. New York.
14. Colour Trends- Vol. I, Ethnic, Japanese, High- Tech Colors, AIM Creative Products Pvt. Ltd.
15. Colour- A guide to basic facts and concepts, John Wiley & Sons, New York.

BIOTECHNOLOGY

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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(w. e. f. 2016-2017)

DEPARTMENT OF BIOTECHNOLOGY

SECOND YEAR – III SEMESTER SYLLABUS

Paper III-BIOPHYSICAL TECHNIQUES & IMMUNOLOGY

Module I - Spectrophotometry:

Concept of electromagnetic radiation, spectrum of light, absorption of electromagnetic radiations, Concept of chromophores and auxochrome in absorption of electromagnetic radiations, Absorption spectrum and its uses, Beer's law-derivation and deviations, extinction coefficient. Difference between spectrophotometer and colorimeter.

Module II – Applications of spectroscopy :

- a) Principles and applications of UV and visible spectrophotometry.
- b) Spectrofluorometry: Principle, instrumentation and applications.
- c) Absorption & emission flame photometry: Principle, instrumentation and application.
- d) Principles & applications of IR, NMR and Mass spectrometry

Module III- Chromatography:

Partition principle, partition coefficient, nature of partition forces.

Brief account of paper chromatography, thin layer chromatography and column chromatography.

Gel filtration: Concept of distribution coefficient, types of gels and glass beads, applications.

Ion-exchange chromatography: Principle & applications.

Affinity chromatography :Principle & applications

Gas chromatography (GC) and high pressure liquid chromatography (HPLC).

Module IV -Microscopy:

Compound microscopy: Numerical aperture and its importance, resolving power, oil immersion objectives and their significance.

Principles and applications of dark field, phase contrast, fluorescent microscopy. Electron microscopy: Principle and applications of TEM and SEM .

Module V – Immunology :

Immune system, Organs and cells of immune system Immunity, innate immune mechanism

Acquired immune mechanism, Antigen, Antigenicity(factors affecting antigenicity)

Humoral immunity, main pathways of complement system.

Module VI :Antibodies & Types of Immunity :

Antibody structure and classes, Antibody diversity, Genes of antibodies Cell mediated immunity:

TC mediated immunity, NK cell mediated immunity, ADCC, delayed type hypersensitivity, cytokines and brief idea of MHC

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DEPARTMENT OF BIOTECHNOLOGY

SECOND YEAR – IV SEMESTER SYLLABUS

Paper IV – BIOPHYSICAL TECHNIQUES& IMMUNOLOGY- II

Module I - Electrophoresis :

- a) Migration of ions in electric field, Factors affecting electrophoretic mobility.
- b) Gel electrophoresis: -Types of gels, Solubilizers, Procedure, Detection, Recovery & Estimation of macromolecules.
- c) SDS-PAGE electrophoresis: -Applications (determination of molecular weight of protein, molecular biology applications).
- d) Isoelectric focusing & Pulsed-field gel electrophoresis. -Principle & applications.

Module II - Isotopic tracer technique:

- a) Radioactive & stable isotopes, rate of radioactive decay. Units of radioactivity.
- b) Measurement of radioactivity: -Ionization chambers, proportional counters, Geiger-Muller counter (basic principle, instrumentation and technique).

Module III- Applications of radioisotopes:

Principles of tracer technique, advantages and limitations, applications of isotopes in biotechnology (distribution studies, metabolic studies, isotope dilution technique, metabolic studies, clinical applications, autoradiography).

Module IV

-

Centrifugation:

- a) Basic principles, concept of RCF, types of centrifuges (clinical, high speed and ultra centrifuges).
- b) Preparative centrifugation: Differential and density gradient centrifugation, applications (Isolation of cell components).
- c) Analytical centrifugation: Sedimentation coefficient, determination of molecular weight by sedimentation velocity and sedimentation equilibrium methods.

Module IV- Hypersensitivity :

Hypersensitivity and vaccination :General features of hypersensitivity, various types of hypersensitivity, Vaccination: Discovery, principles, significance. Concept of autoimmunity.

Module V - Immunological Techniques :

Antigen-antibody reactions :Precipitation , agglutination , complement fixation, immune diffusion, ELISA. Hybridoma technology: Monoclonal antibodies and their applications in immuno diagnosis.

Recommended Books:

1. Biochemistry - By Dr. U. Satyanarayana, U. Chakrapani
2. Biochemistry - By J.L. Jain
3. Biochemistry - By Conn and Stumpf
4. Biochemistry - By Lehninger
5. Medical Biochemistry- S. Ramakrishnan, R. Rajan, and K.G. Prasanna (Orient Longman)
6. Biochemistry - By Stryer
7. Biochemistry - By Voet and Voet
8. Biochemistry (Jaypee) - By Vasudevan
9. Biochemistry - By David Rawn
10. General Biochemistry - By J.H. Well
11. Biochemistry - By K. Trehan
12. Biochemical Methods - By S. Sadasivam and A. Manickam
13. An introduction to Practical Biochemistry - By T. Plummer
13. Experimental Biochemistry - A Student Companion - By V. Deshpande and B. Sasidhar Rao
14. Practical Biochemistry - By Upadhyay, Wilson and Wilson, Wilson & Walker
15. Biochemistry - Viva Series
16. Cell and Molecular Biology - By De Robertis
17. Cell and Molecular Biology - By Lodish
18. Cell Biology and Genetics - By P.K. Gupta
19. Biotechnology - By K. Trehan
20. Biotechnology – I - By R.S. Setty and G.R. Veena
21. Biotechnology – II - By R.S. Setty and V. Sreekrishna
22. Cell Biology - By S.C. Rastogi (New Age International (P) Ltd)
23. Immunology – Ivan Roitt
24. Immunology – Kubly
25. Cellular and molecular immunology – Abul Abbas
26. Microbiology by M.J. Pelczar, E.S.N. Chan and N.R. Krieg, McGraw Hill.
27. General Microbiology by H.G. Schlegel Cambridge University Press.
28. General Microbiology by Stanier, R.Y., J.L. Ingraham, M.L. Wheelis & P.R. Painter
29. Microbiology – concepts and Application. John Wiley and Sons, New York, 1988.

ANNEXURE – III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

SECOND YEAR BIOTECHNOLOGY

(w.e.f. 2016-2017)

PRACTICAL PAPER – II

Immunology & Biophysical techniques

1. Spectrophotometric analysis of DNA denaturation.
2. Determination of absorption spectrum of oxy- and deoxyhemoglobin and methemoglobin.
3. Protein estimation by E280/E260 method.
4. Paper chromatography of amino acids/sugars.
5. TLC of sugars/amino acids.
6. Cellular fractionation and separation of cell organelles using centrifuge
7. Estimation of DNA by diphenylamine method
8. Estimation of RNA by orcinol method
9. Validity of Beer's law for colorimetric estimation of creatinine.
10. Absorption spectrum of NAD & NADH
11. Titration of a mixture of strong & weak acid
12. Gel electrophoresis of nucleic acids.
13. SDS-PAGE of an oligomeric protein.
14. Antigen-antibody reaction- determination of Blood group
15. Pregnancy test
16. Widal test
17. Ouchterlony immune diffusion
18. Radial immunodiffusion

Biochemistry

COURSE -III: BIOENERGETICS AND METABOLISM I

Unit- I : Bioenergetics

10 hours

Bioenergetics: Thermodynamic principles – Chemical equilibria; free energy, enthalpy (H), entropy (S). Free energy change in biological transformations in living systems; High energy compounds. Energy, change, oxidation-reduction reactions.

Unit II: Biological Oxidations in Mitochondria

11hours

Organization of electron carriers and enzymes in mitochondria. Classes of electron-transferring enzymes, inhibitors of electron transport. Oxidative phosphorylation. Uncouplers and inhibitors of oxidative phosphorylation. Mechanism of oxidative phosphorylation.

Unit- III : Techniques employed in metabolic studies

12 hours

Broad outlines of Intermediary metabolism, methods of investigation, Intermediary metabolism in vivo studies such as analysis of excretion, Respiratory exchange, Removal of organs and perfusion studies, in vitro studies such as tissue slice techniques; Homogenates and purified enzyme systems; isotope tracer studies, use of inhibitors and antimetabolites.

Unit- IV : Carbohydrate Metabolism

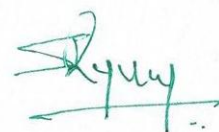
15 hours

Concept of anabolism and catabolism. Glycolytic pathway, energy yield. Fate of pyruvate- formation of lactate and ethanol, Pasteur effect. Citric acid cycle, regulation, energy yield, amphipathic role. Anaplerotic reactions. Glycogenolysis and glycogenesis. Pentose phosphate pathway. Gluconeogenesis. Photosynthesis- Light and Dark reactions, Calvin cycle, C_4 Pathway. Disorders of carbohydrate metabolism.

Unit- V : Lipid Metabolism

12 hours

Catabolism of fatty acids (β - oxidation) with even and odd number of carbon atoms, Ketogenesis, *de novo* synthesis of fatty acids, elongation of fatty acids in mitochondria and microsomes, Biosynthesis and degradation of triacylglycerol and lecithin. Biosynthesis of cholesterol. Disorders of lipid metabolism.



CORE COURSE-IV: METABOLISM II AND BIOCHEMICAL TECHNIQUES

Unit I: Nitrogen Fixation

13hours

Nitrogen cycle, Non-biological and biological nitrogen fixation, Nitrogenase system. Utilization of nitrate ion, Ammonia incorporation into organic compounds. Synthesis of glutamine and regulatory mechanism of glutamine synthase.

Unit-II : Metabolism of Amino acids

15 hours

General reactions of amino acid metabolism- transamination, decarboxylation and deamination, Urea cycle and regulation, Catabolism of carbon skeleton of amino acids- glycogenic and ketogenic amino acids. Metabolism of glycine, serine, aspartic acid, methionine, phenylalanine and leucine. Biosynthesis of creatine. Inborn errors of aromatic and branched chain amino acid metabolism.

Unit-III: Metabolism of Nucleic acid and heme

15 hours

Biosynthesis and regulation of purine and pyrimidine nucleotides, *de novo* and salvage pathways. Catabolism of purines and pyrimidines. Biosynthesis of deoxyribonucleotides- ribonucleotide reductase and thymidylate synthase and their significance. Disorders of nucleotide metabolism- Gout, Lesch- Nyhans syndrome. Biosynthesis and degradation of heme.

Unit-IV: Biochemical Techniques I

15 hours

Methods of tissue homogenization: (Potter-Elvehjem, mechanical blender, sonicator and enzymatic).

Principle and applications of centrifugation techniques- differential, density gradient. Ultra-centrifugation- preparative and analytical.

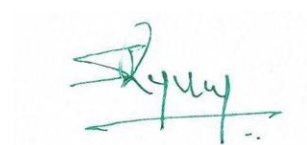
Principle and applications of chromatographic techniques- paper, thin layer, gel filtration, ion- exchange and affinity chromatography. Elementary treatment of an enzyme purification.

Electrophoresis- principles and applications of paper, polyacrylamide (native and SDS) and agarose gel electrophoresis.

Unit-V: Biochemical Techniques II

12 hours

Colorimetry and Spectrophotometry- Laws of light absorption- Beer-Lambert law. UV and visible absorption spectra, molar extinction coefficient, biochemical applications of spectrophotometer. Principle of fluorimetry. Tracer techniques: Radio isotopes, units of radio activity, half-life, β and γ - emitters, use of radioactive isotopes in biology.



LIST OF PRACTICALS
Paper - II

3rd SEMESTER PRACTICAL – QUANTITATIVE ANALYSIS

45 hrs

1. Estimation of amino acid by Ninhydrin method.
2. Estimation of protein by Biuret method.
3. Estimation of protein by Lowry method.
4. Estimation of glucose by DNS method.
5. Estimation of glucose by Benedict's titrimetric method.
6. Estimation of total carbohydrates by Anthrone method.

4TH SEMESTER PRACTICAL – BIOCHEMICAL TECHNIQUES

45 hrs

1. Isolation of egg albumin from egg white.
2. Isolation of cholesterol from egg yolk.
3. Isolation of starch from potatoes.
4. Isolation of casein from milk.
5. Separation of amino acids by paper chromatography.
6. Separation of serum proteins by paper electrophoresis.
7. Separation of carbohydrates by TLC

MATHEMATICS

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

SECOND YEAR B.Sc. MATHEMATICS

THIRD SEMESTER

CORE COURSE-III: ABSTRACT ALGEBRA

(w. e. f. 2016-2017)

UNIT – 1 : (10 Hrs) GROUPS : -

Binary Operation – Algebraic structure – semi group-monoid – Group definition and elementary properties Finite and Infinite groups – examples – order of a group. Composition tables with examples.

UNIT – 2 : (14 Hrs) SUBGROUPS : -

Complex Definition – Multiplication of two complexes Inverse of a complex-Subgroup definition – examples-criterion for a complex to be a subgroups.

Criterion for the product of two subgroups to be a subgroup-union and Intersection of subgroups.

Co-sets and Lagrange's Theorem :-

Cosets Definition – properties of Cosets–Index of a subgroups of a finite groups–Lagrange's Theorem.

UNIT –3 : (12 Hrs) NORMAL SUBGROUPS : -

Definition of normal subgroup – proper and improper normal subgroup–Hamilton group – criterion for a subgroup to be a normal subgroup – intersection of two normal subgroups – Sub group of index 2 is a normal sub group – simple group – quotient group – criteria for the existence of a quotient group.

UNIT – 4 : (10 Hrs) HOMOMORPHISM : -

Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – automorphism definitions and elementary properties–kernel of a homomorphism – fundamental theorem on Homomorphism and applications.

UNIT – 5 : (14 Hrs) PERMUTATIONS AND CYCLIC GROUPS : -

Definition of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley's theorem.

Cyclic Groups :-

Definition of cyclic group – elementary properties – classification of cyclic groups.

Prescribed Text Book: A text book of Mathematics for B.A. / B.Sc. by B.V.S.S. SARMA and others, Published by S.Chand & Company, New Delhi.

Reference Books :

1. Abstract Algebra, by J.B. Fraleigh, Published by Narosa Publishing house.
2. Modern Algebra by M.L. Khanna.

Suggested Activities:

Seminar/ Quiz/ Assignments/ Project on Group theory and its applications in Graphics and Medical image Analysis

ANNEXURE - IV
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
SECOND YEAR B.Sc. MATHEMATICS
FOURTH SEMESTER
CORE COURSE-IV: REAL ANALYSIS(w. e. f. 2016-2017)

UNIT – I (12 hrs) : REAL NUMBERS :

The algebraic and order properties of $\mathbb{R}$, Absolute value and Real line, Completeness property of $\mathbb{R}$, Applications of supreme property; intervals. No. Question is to be set from this portion.

Real Sequences: Sequences and their limits, Range and Boundedness of Sequences, Limit of a sequence and Convergent sequence.

The Cauchy's criterion, properly divergent sequences, Monotone sequences, Necessary and Sufficient condition for Convergence of Monotone Sequence, Limit Point of Sequence, Subsequences and the Bolzano-weierstrass theorem – Cauchy Sequences – Cauchy's general principle of convergence theorem.

UNIT –II (12 hrs) : INFINITIE SERIES :

Series : Introduction to series, convergence of series. Cauchy's general principle of convergence for series tests for convergence of series, Series of Non-Negative Terms.

1. P-test
2. Cauchy's n^{th} root test or Root Test.
3. D'Alemberts' Test or Ratio Test.
4. Alternating Series – Leibnitz Test.

Absolute convergence and conditional convergence, semi convergence.

UNIT – III (12 hrs) : CONTINUITY :

Limits : Real valued Functions, Boundedness of a function, Limits of functions. Some extensions of the limit concept, Infinite Limits. Limits at infinity. No. Question is to be set from this portion.

Continuous functions : Continuous functions, Combinations of continuous functions, Continuous Functions on intervals, uniform continuity.

UNIT – IV (12 hrs) : DIFFERENTIATION AND MEAN VALUE THEORMS :

The derivability of a function, on an interval, at a point, Derivability and continuity of a function, Graphical meaning of the Derivative, Mean value Theorems; Role's Theorem, Lagrange's Theorem, Cauchy's Mean value Theorem

UNIT – V (12 hrs) : RIEMANN INTEGRATION :

Riemann Integral, Riemann integral functions, Darboux theorem. Necessary and sufficient condition for $\mathbb{R}$ – integrability, Properties of integrable functions, Fundamental theorem of integral calculus, integral as the limit of a sum, Mean value Theorems.

Prescribed Text Book: A Text Book of B.Sc Mathematics by B.V.S.S. Sarma and others, Published by S. Chand & Company Pvt. Ltd., New Delhi.

Reference Books :

1. Real Analysis by Rabert & Bartely and .D.R. Sherbart, Published by John Wiley.
2. Elements of Real Analysis as per UGC Syllabus by Shanthi Narayan and Dr. M.D. Raisingkania Published by S. Chand & Company Pvt. Ltd., New Delhi.

ANNEXURE – IV(A)
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
SECOND YEAR - FOURTH SEMESTER
FOR ALL DEGREE PROGRAMMES
FOUNDATION COURSE: ANALYTICAL SKILLS (w. e. f. 2016-2017)

UNIT-I: Data Analysis: The Data given in a table, Graph, Bar Diagram, Pie chart, venn diagram or a passage is to be analysed and the questions pertaining to the data are to be answered.

Unit-II: Sequence and Series: Analogies of numbers and alphabets completion of blank spaces following the pattern A:b::C:d relationship odd thing out, missing number in the sequence or series

Unit-III: Arithmetic Ability: Algebraic operations BODMAS, Fractions, Divisibility rules, LCM, GCD(HCF).

Date Time and Arrangement Problems: Calendar problems, Clock problems, Blood relationship.

Unit-IV: Quantitative Aptitude: Averages, ratio and Proportion, Problems on ages, time, distance, speed.

Unit-V: Business Computations: percentages, profit & loss, Partnership, simple compound interest.

Prescribed Text Book: Quantitative Aptitude for Competitive exams By R S Agarwal.

Reference Books: 1. Quantitative Aptitude and Reasoning By R V Praveen, PHI Publishers.
2. Quantitative Aptitude for competitive exams By Abhijith Guha ,Tata Mc.Gra Hill.

Physics

ANNEXURE - III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)

SECOND YEAR B.Sc. PHYSICS (FOR MATHEMATICS COMBINATIONS)

THIRD SEMESTER

CORE COURSE-III: THERMODYNAMICS AND WAVE OPTICS

(w. e. f. 2016-2017)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I : Kinetic theory of gases

11 hrs

Introduction –Deduction of Maxwell’s law of distribution of molecular speeds, experimental verification - Toothed wheel experiment. Transport phenomena-Viscosity of gases-thermal conductivity-diffusion of gases.

UNIT-II: Thermodynamics

12hrs

Introduction and work done in Isothermal and adiabatic processes- First law of thermodynamics - applications, Reversible and irreversible processes-Carnot’s engine and its efficiency-Carnot’s theorem-Second law of thermodynamics, Kelvin’s and Clausius statements-Entropy, physical significance –Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram

UNIT-III: Thermodynamic potentials and Maxwell’s equations

10hrs

Thermodynamic potentials-Derivation of Maxwell’s thermodynamic relations- Clausius-Clayperon’s equation and its application-Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas.

UNIT-IV: Aberrations

7 hrs

Introduction – monochromatic aberrations, spherical aberration (no derivation), methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion, Chromatic aberration-the achromatic doublet, Removal of chromatic aberration by a separated doublet.

UNIT V: Interference-I

10hrs

Principle of superposition-coherence- temporal coherence and spatial coherence-conditions for interference of light, Fresnel’s biprism-determination of wavelength of light, Determination of thickness of a thin sheet of transparent material using biprism –Lloyd’s mirror experiment.

Lasers: introduction, spontaneous emission-stimulated emission-population inversion. Laser principle-Einstein coefficients-Types of lasers-He-Ne laser-ruby laser-applications of lasers.

UNIT VI: Interference-II

10 hrs

Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films-Non reflecting films-interference by a plane parallel film illuminated by a point source- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film) - determination of diameter of wire, Newton's rings in reflected light - Determination of wavelength of monochromatic light, Michelson interferometer-types of fringes -Uses- Determination of wavelength of monochromatic light, Difference in wavelength of sodium D_1 , D_2 lines and thickness of a thin transparent plate.

Reference Books:

1. II BSc Physics -Telugu Academy, Hyderabad
2. Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition 2007
3. Text Book of +3 Physics – Samal, Mishra & Mohanty, National Library, Min.of Culture, Govt of India
4. Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd, 2000
5. University Physics, HD Young, MW Zemansky, FW Sears, Narosa Publishers, New Delhi
6. Unified Physics Vol.II Optics & Thermodynamics – Jai Prakash Nath & Co.Ltd., Meerut
7. Heat, Thermodynamics and Statistical Physics-N BrijLal, P Subrahmanyam, PS Hemne, S.Chand & Co., 2012
8. Thermodynamics - R.C. Srivastava, Subit K. Saha & Abhay K. Jain Eastern Economy Edition.
9. Optics – FA Jenkins and HG White, McGraw-Hill
10. A Text Book of Optics-N Subramanyam, L Brijlal, S.Chand & Co.
11. Principles of Optics- BK Mathur, Gopala Printing Press, 1995
12. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publication

ANNEXURE - IV
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)
SECOND YEAR B.Sc. PHYSICS (FOR MATHEMATICS COMBINATIONS)
FOURTH SEMESTER
CORE COURSE-IV: RADIATION PHYSICS AND OPTICS
(w. e. f. 2016-2017)

Work load: 60 hrs per semester

4 hrs/week

UNIT-I: Low temperature Physics

12 hrs.

Introduction-Joule Kelvin effect-liquefaction of gas using porous plug experiment-Distinction between Joule expansion, adiabatic expansion and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kammerling Onne's method, Kapitza's method-Adiabatic demagnetization-Working of refrigerator- vapour compression machine, Properties of He-I & He-II, properties of substances at low-temperature

UNIT-II : Quantum theory of radiation

12 hrs

Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law-statement and formula, Wein's law-statement and formula, Rayleigh-Jean's law-statement and formula -Quantum theory of radiation-Planck's law- Different laws from Planck's radiation law, Measurement of radiation-Types of pyrometers-Disappearing filament optical pyrometer - Angstrom's pyro-heliometer-determination of solar constant, effective temperature of Sun.

UNIT-III : Diffraction

10hrs

Introduction, distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction -Diffraction due to single slit and circular aperture-Limit of resolution-Rayleigh's criterion of resolution, Limit of resolution of a telescope, Fraunhofer diffraction due to doublet slit-Fraunhofer diffraction pattern with N slits (diffraction grating), Resolving power of grating-Determination of wavelength of light.

UNIT-IV: Diffraction -II & Holography

10 hrs

Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-phase reversal zone plate-diffraction at a straight edge-difference between interference and diffraction.

Holography: Basic principle of holography-Gabor hologram and its limitations, holography applications.

UNIT V: Polarisation**10 hrs**

Polarized light: methods of polarization - polarization by reflection, refraction, double refraction, selective absorption, scattering of light-Brewster's law-Malus law-Nicol prism, polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, Laurent's half shade polarimeter.

UNIT-VI: Fiber Optics**06hrs**

Introduction- different types of fibers, single mode and multi mode optical fiber, step index and graded index optical fiber, fiber materials, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

Reference Books:

1. II BSc Physics -Telugu Academy, Hyderabad
2. Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition 2007
3. Text Book of +3 Physics – Samal, Mishra & Mohanty, National Library, Min.of Culture, Govt of India
4. Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd, 2000
5. University Physics, HD Young, MW Zemansky, FW Sears, Narosa Publishers, New Delhi
6. Unified Physics Vol.II Optics & Thermodynamics – Jai Prakash Nath & Co.Ltd., Meerut
7. Heat, Thermodynamics and Statistical Physics-N Brij Lal, P Subrahmanyam, PS Hemne, S.Chand & Co., 2012
8. Thermodynamics - R.C. Srivastava, Subit K. Saha & Abhay K. Jain Eastern Economy Edition.
9. Optics – FA Jenkins and HG White, McGraw-Hill
10. A Text Book of Optics-N Subramanyam, L Brijlal, S.Chand & Co.
11. Principles of Optics- BK Mathur, Gopala Printing Press, 1995
12. Introduction of Lasers – Avadhanlu, S.Chand & Co.
13. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publication

ANNEXURE - VI
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)
SECOND YEAR B.Sc. PHYSICS (FOR MATHEMATICS COMBINATIONS)
(w.e.f. 2016-2017)

LIST OF PRACTICALS

Paper – II

1. Determination of radius of curvature of a given plano convex lens-Newton's rings method.
2. Resolving power of grating.
3. Study of optical rotation of a liquid –polarimeter.
4. Dispersive power of material of a prism.
5. Determination of wavelength of light using diffraction grating minimum deviation method.
6. Wavelength of light using diffraction grating-normal incidence method.
7. Resolving power of a telescope.
8. Refractive index of a liquid-hollow prism
9. Determination of thickness of a thin fiber by wedge method
10. Spectrometer- i-d curve.
11. Determination of refractive index of liquid-Boy's method.
12. Determination of wavelength of laser – Light diffraction grating
13. Thermal conductivity of bad conductor-Lee's method
14. Measurement of Stefan's constant.
15. Heating efficiency of electrical kettle with varying voltages.
16. Thermo emf- thermo couple potentiometer
17. Coefficient of thermal conductivity of copper- Searle's apparatus.
18. Temperature variation of resistance- thermister characteristics.
19. Thermal conductivity of Rubber

Computer Science

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)

B.Sc. Three-Year Degree Course (Semester Wise)

Syllabus for IInd Year – IIIrd Semester.

Part – II : COMPUTER SCIENCE

Paper-III: OBJECT ORIENTED PROGRAMMING USING JAVA

No. of hours per week: 04

Max Marks: 75

UNIT-I

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, JavaFeatures: **OVERVIEW OF JAVA LANGUAGE:** Introduction, Simple Java program structure,Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS.**

UNIT-II

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of,if. else statements, the else if ladder, the Switch statement, the conditional operator. **LOOPING:** Introduction, The While statement, The do-while statement, the for statement, Jumps in loops.

Andhra Pradesh State Council of Higher Education

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method Overloading, Static members, Nesting of methods;

UNIT-III

INHERITANCE: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an Array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

UNIT -IV

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending Interfaces, implementing interfaces, Assessing interface variables;

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, using a Package

UNIT-V

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the

Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors : Compile-time errors, Runtime Errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally Statement

UNIT-VI

APPLET PROGRAMMING: local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead State, Display state.

Reference Books:

1. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill

ANNEXURE - II
KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2016-17)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for IInd Year – IVth Semester.
Part – II: COMPUTER SCIENCE
Paper-IV: DATA STRUCTURES

No. of hours per week : 04

Max Marks :75

UNIT I

Concept of Abstract Data Types (ADTs) - Data Types, Data Structures, Storage Structures, and File Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.

UNIT II

Linear Lists – ADT, Array and Linked representations, Pointers.

Arrays – ADT, Mappings, Representations, Sparse Matrices, Sets – ADT, Operations

Linked Lists: Single Linked List, Double Linked List, Circular Linked List, applications

UNIT III

Stacks: Definition, ADT, Array and Linked representations, Implementations and Applications

Queues: Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications.

UNIT IV

Trees: Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) – Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees.

UNIT V

Graphs – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees, Dijkstra's Algorithm, Prim's Algorithm

UNIT- VI

Sorting and Searching: Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential and Binary Searching.

REFERENCE BOOKS

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. Samanta D, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G I., Data Structures and Algorithms with Object-Oriented Programming, Tata McGraw-Hill. 2002. (Chapters I and 14).
5. Tremblay P, and Sorenson P G, Introduction to Data Structures with Applications, Tata McGraw-Hill,

ANNEXURE – V
LIST OF PRACTICALS
KVR GOVT. COLLEGE (AUTONOMOUS): : KURNOOL

II B.Sc COMPUTER SCIENCE (Revised syllabus W.E.F.2016- 2017)

Practical II: Java with Data Structures Lab

Java Lab Cycle

1. Write a program to perform various String Operations
2. Write a program on class and object in java
3. Write a program to illustrate Function Overloading & Function Overriding methods in Java
4. Write a program to illustrate the implementation of abstract class
5. Write a program to implement Exception handling
6. Write a program to create packages in Java
7. Write a program on interface in java
8. Write a program to Create Multiple Threads in Java
9. Write a program to Write Applets to draw the various polygons
10. Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java
11. Write a program to assign priorities to threads in java

Data Structures Lab Cycle

1. Write a Program to implement the Linked List operations
2. Write a Program to implement the Stack operations using an array.
3. Write Programs to implement the Queue operations using an array.
4. Write Programs to implement the Stack operations using a singly linked list.
5. Write Programs to implement the Queue operations using a singly linked list.
6. Write a program for arithmetic expression evaluation
7. Write a program to implement Double Ended Queue using a doubly linked list.
8. Write a program to search an item in a given list using Linear Search and Binary Search
9. Write a program for Quick Sort
10. Write a program for Merge Sort
11. Write a program on Binary Search Tree operations(insertion, deletion and traversals)
12. Write a program for Graph traversals

M.Sc. Botany

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

SEMESTER-I

UNIT – 1: ALGAE

General characters of algae -thallus diversity, pigmentation and life cycles. Recent trends in classification of algae - a general account. Salient features and classification of Cyanophyta (Cyanobacteria), Rhodophyta, Phaeophyta, Bacillariophyta and Chlorophyta. Economic importance of algae: Algae as food(single cell proteins); biofertilizers; industrial products; biofuels; harmful algae-algal blooms.

UNIT II: BRYOPHYTES

General characters and classification of Marchantiophyta; Anthocerotophyta and Bryophyta. Salient features of the orders and representatives: Marchantiales (Marchantia), Jungermanniales (Porella), Anthoceratales (Anthoceros) and Polytrichales (Polytrichum). Diversity and evolution of gametophyte and sporophyte. Ecology and Conservation of bryophytes.

UNIT III: PTERIDOPHYTES

General characters and classification of pteridophytes. Classification of extinct pteridophytes and salient features of representatives: Psilotopsida (Psilotum), Lycopsidea (Lycopodium), Equisetopsida (Equisetum), Marratiopsida (Angiopteris) and Polypodopsida (Pteris). Origin and phylogeny of pteridophytes- telome theory , stelar theory. Heterospory and Seed habit.

UNIT IV: GYMNASPERMS AND PLANT FOSSILS

General characters and classification of divisions and salient features of representatives: Cycadophyta (Cycas), Pinophyta (Pinus), Ginkgophyta (Ginkgo) and Gnetophyta (Gnetum). Economic importance of gymnosperms. Principles of Paleobotany - geological time scale; process of fossilization; types of fossils. Brief account on fossil algae, and bryophytes. Fossil pteridophytes – a general account. Salient features and evolutionary significance of fossil gymnosperms - Pteridospermales and Bennitiales.

PRACTICALS

1. Observation of representatives of all groups in the natural habitat.
2. Morphological study of representative members of all groups using whole mount preparations and sections.
3. Study of morphology and anatomy of vegetative structures of Algae, Bryophytes, Pteridophytes and Gymnosperms
4. Each student has to submit herbarium specimens and a report on field study.

SUGGESTED READINGS:

1. Agashe S.N. 1995. Paleobotany. Oxford & IBH, NewDelhi
2. Bernard Goffinet & Jonathan Shaw. 2008. Bryophyte Biology. 2nd ed. Cambridge University Press.
3. Bhatnagar, S.P. & Alok Mitra. 1997. Gymnosperms. New Age Int. (P) Ltd.
4. Charles C. Beck and Charles B. Beck. (Ed). 1988. Origin and Evolution of Gymnosperms. CUP.
5. Chopra, R.N. & P.K. Kumar. 1988. Biology of Bryophytes. Wiley Eastern.
6. Graham, J.E., Lee, W. Wilox & L.E. Graham. 2008. Algae. 2nd ed. Benjamin Cummings
7. Sambamurthy AVSS. 2005. A Text Book of Bryophytes, Pteridophytes, Gymnosperms and Paleobotany. IK International Pvt. Ltd.
8. Sporne, K.R. 1965. Morphology of Gymnosperms. HUP, London
9. Sporne, K.R. 1976. Morphology of Pteridophytes. HUP, London
10. Van den Hoek , Christian D. Mann & H.M. Jahns et al. 1995. Algae, An introduction to phycology. Cambridge University Press.
11. Vashista, P.C. 2005. Gymnosperms. S.Chand & Co., New Delhi
12. Vashista, P.C. 2005. Pteridophyta. Revised ed., By Sinha and Anil. S. Chand & Co, New Delhi.
13. Vashishta, B.R., V.P.Singh & A.P. Sinha. 2012. Botany for Degree Students: Algae. 34th ed. S. Chand & Co, New Delhi.
14. Vashishta, B.R., A.K. Sinha & Adarsh Kumar . 2011. Botany for Degree Students Part III Bryophyta.. 3rd ed. S. Chand & Co, New Delhi

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

PAPER 102: PLANT TAXONOMY

UNIT – 1: ANGIOSPERMIC CLASSIFICATION AND PHYLOGENY

Plant taxonomy- scope and significance. History of plant classifications: Artificial, Natural and Phylogenetic classifications. Natural system- Bentham and Hooker's classification. Principles of phylogenetic classifications–data sources; Plesiomorphy, apomorphy; monophyly and polyphyly. Cladograms and Phylogenetic trees. Angiospermic Phylogeny Group classification (APG-III). Clades, Orders and Families. A Comprehensive account on origin, phylogeny and diversification of angiosperms.

UNIT –II: FLORISTIC STUDIES AND HERBARIUM METHODOLOGY

Plant explorations around the world – a general account. Floristic inventories in India – a general account. Botanical Survey of India - organisation and activities. Flora of Andhra Pradesh – a general account; endemic plants and threatened taxa. Herbarium methodology- methods of collection, processing and preservation of plant specimens. Significant herbaria of the world and India.

UNIT – III: PLANT IDENTIFICATION AND NOMENCLATURE

Process of identification- conventional and modern approaches; Preparation of taxonomic keys. Taxonomic literature- floras, journals and databases. International Code of Nomenclature(ICN)- Principles, Rules and Recommendations; taxonomic hierarchy-species, genera and families; typification , rule of priority; concept of names and author citation; effective and valid publication. Describing a new species.

UNIT – IV: STUDY OF SELECTED ANGIOSPERMIC CLADES-ORDERS

Salient features , distribution and diversity of the following groups (based on APG –III); ANITA Grade; Magnolids (Magnoliales- Annonaceae); Monocots (Asparagales- Orchidaceae); Commelinids (Poales- Poaceae); Fabids (Fabales- Fabaceae, Malphigiales- Euphorbiaceae); Malvids (Malvales- Malvaceae, Caryophyllales-Amaranthaceae); Lamids (Gentianales- Apocyanaceae, Solanales- Solanaceae, Lamiales- Lamiaceae); Campanulids (Asterales- Asteraceae).

PRACTICALS

1. Study of about 25 wild taxa representing different families and identification to species level
2. Study of flora of the college campus
3. As a part of Botanical Tour, student should observe and record the flora and vegetation types of the study area and submit a report at the time of practical examination
4. Part of practical, student should submit 50 herbarium specimens of common wild plant taxa
5. Construction of Taxonomic Keys
6. Nomenclatural exercise

SUGGESTED READINGS:

1. Angiosperm Phylogeny Group website. 2015. Consult [www.apgweb](http://www.apgweb.org).
2. Gamble & Fischer 1915-35. Flora of Presidency of Madras. 3 Vols. BSMS, Dehradun
3. Heywood, V.H., RK Burmmit, A. Culham, O. Seberg. 2007. Flowering plant Families of the World. Firefly books Ltd. New York.
4. Judd, W.S., Christopher, S. Campbell, Elizabeth A. Kellogg, Peter F. Stevens and Michael J. Donoghue. 2007. Plant Systematics: A Phylogenetic Approach, 3rd ed. Sinauer.
5. Lawrence, G.H.M. 1951. Taxonomy of vascular plants. McMillan, New York.
6. Naik, V.N. 1992. Taxonomy of Angiosperms. 2nd Edn. Tata Mc Graw Hill Publications.
7. Pullaiah, T. 2005. Taxonomy of Angiosperms. Regency publications, New Delhi.
8. Pullaiah, T. et al. 1997. Flora of Andhra Pradesh. 4 Vols. Scientific Publishers, Jodhpur
9. Radford, A.E. et. al. Vascular plant systematic. Harper & Row. New York.
10. Ravi Prasad Rao, B. 2014. The Plant Directory. Anusha Publishers, Hyderabad.
11. Simpson, Michael G. 2006. Plant Systematics. Elsevier & Academic Press.
12. Singh, Gurucharan. 2005. Plant Systematics. Oxford & IBH. New Delhi.
13. Sivarajan, V.V. 1991. Introduction to Principles of Plant Taxonomy. Oxford & IBH. New Delhi.

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PAPER 103: PLANT DEVELOPMENT AND REPRODUCTION

UNIT –I: MERISTEMS, TISSUE SYSTEMS AND SHOOT DEVELOPMENT

Meristems, classification and types. Organization of shoot apical meristem. Simple and Complex tissues. Structure and development of xylem and phloem. Epidermal, ground and vascular tissue systems - cambium, laticifers, periderm, lenticels, Stem-anatomy of node, primary structure and secondary growth: annual rings, heart wood and sap wood , hard and soft wood, reaction wood. Anomalous secondary growth.

UNIT – II: ROOT, LEAF AND FLOWER DEVELOPMENT

Root-Organization of Root apical meristem (RAM), quiescent centre, vascular tissue differentiation. Primary structure and Secondary growth in roots. Leaf growth and differentiation-histology and development of angiosperm leaf . Floral meristems- development of flower with reference to Arabidopsis and Antirrhinum. Programmed cell death, ageing and senescence.

UNIT III: PLANT REPRODUCTION-MALE AND FEMALE GAMETOPHYTES

Microsporangium, microsporogenesis and male gametophyte. Anthers-structure and development of anther wall– anther tapetum- secretory and periplasmodial, role of tapetum. Male gametophyte development. Pollen wall –structure and development. Types of ovules, megasporogenesis. Embryosac – ultra structure, development and types: monosporic, bisporic and tetrasporic; nutrition of the embryosac. Pollination and fertilization: pollen–pistil interactions, double fertilization.

UNIT IV: ENDOSPERM, EMBRYO, POLYEMBRYONY AND APOMIXIS

Development of Endosperm-nuclear, cellular and helobial types; endosperm haustoria, composite and ruminant endosperm. Development of embryo in dicots- onagrad, asterad, chenopodiad, caryophyllad and solanad types; suspensor. Polyembryony – nucellar, integumentary, synergid, zygotic, suspensor and multiple types; twins and triplets; causes of polyembryony and applications. Apomixis- apospory, diplospory, pseudogamy, semigamy, parthenogenesis.

PRACTICALS

1. Examination of meristems
2. Study of tissues and tissue systems.
3. Study of internal organization of different types of stems and roots.
4. Study of internal organization of plants showing anomalous secondary growth.
5. Study of epidermal peels of leaves to study the development and structure of stomata for stomatal index.
6. Study of microsporogenesis and gametogenesis in anther sections.
7. Examination of anthers dehiscence and collection of pollen grains for microscopic examination (maize, grasses, brinjal, Crotalaria, Tradescantia, Brassica, Petunia, etc.)

8. Study of pollen grains by acetolysis.
9. Dissection and mouting of endosperm and embryo showing developmental stages and haustoria.

SUGGESTED READINGS:

1. Bhojwani, S.S. and S.P. Bhatnagar 2002. The embryology of Angiosperms (4th ed.) Vikas Publication House, New Delhi.
2. Eames, A.J. and E.M. McDaniels. 1947. An Introduction to Plant Anatomy. Mc Graw Hill Book Company ,New York.
3. Esau. K. 1979. Anatomy of seed plants. John Willy & Sons
4. Fahn. A. 1992. Plant Anatomy 3rd Ed. Pergamon press,Oxford.
5. Johri, B.M. 1984, Embryology of Angiosperms Springer-Verlag ,Berlin.
6. Johri, B.M. 1981. Experimental embryology of vascular plants. Springer-Verlag, Berlin.
7. Maheswari,P.1980. An Introduction to the Embryology of Angiosperms, Tata, mccrawin
8. Pullaiah, T., K.C. Naidu, K. Laxmi Narayana and B. Hanumantha Rao. 2007. Plant Development , Regency Publications , New Delhi.
9. Raghavan, V. 1999. Developmental Biology of Flowering Plants. Springer Verlag, Berlin.

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PAPER 104: PLANT PHYSIOLOGY

UNIT I: PLANT AND SOIL WATER RELATIONS

Thermodynamic concept of plant cell and water relations. Water Potential, Osmotic potential and Pressure potential. Dynamics of SPAC. Active and Passive absorption of Ions. Essential elements- functions and deficiency symptoms. Stomatal structural features; mechanism of stomatal movements and stomatal Index. Stomatal responses to environmental factors, antitranspirants and their importance in drought resistance.

UNIT II: PHOTOSYNTHESIS

Current knowledge on mechanism of photosynthesis- LHCs, photochemical reactions, electron transport in chloroplasts. Oxygen evolution and photophosphorylation. Carbon fixation pathways- Reductive PPP and its regulation by light and metabolites; C4 pathway; CAM Pathway; C-3, C-4 Intermediates. Photosynthesis vs. Plant productivity. Photorespiration- Glycolate pathway, Significance of photorespiration.

UNIT III: RESPIRATION AND PLANT GROWTH REGULATORS

Significance of Plant Respiration; Glycolysis, TCA Cycle, ETS and ATP synthesis. Pentose Phosphate Pathway. Glyoxylate cycle, Alternate oxidase system. Biosynthesis and mechanism of action of plant growth regulators- Auxins, Gibberellins, Cytokinins, Brassinosteroids, Abscissic acid, Jasmonic acid and salicylic acid. Role of hormones in agriculture. Physiology of flowering- Kinetics of phytochrome; Photoperiodism

UNIT IV: NITROGEN METABOLISM

Biological nitrogen fixation : Symbiotic and Asymbiotic; Legume - Rhizobium symbiosis; nodule formation; mechanism of nitrogen fixation; mechanism of nitrate uptake, reduction and ammonia assimilation.

PRACTICALS

1. Determination of total chlorophyll content and a/b ratio in leaves.
2. Separation of chloroplast pigments into two or four groups. Record of their absorption spectra
3. Determination of cell permeability by using Beet Root tissues.
4. Determination of stomatal index and frequency in leaves
5. Determination of water potential of the tissue
6. Comparative anatomy of C3, C4 and CAM plants
7. Determination of Titrable acidity (TAN) in leaves of CAM plants
8. Determination of viability of different seed material.
9. Estimation of IAA by Solkowsky rection
10. Determination of membrane stability and chlorophyll stability index
11. Estimation of free proline in stressed plant samples.

SUGGESTED READINGS

1. Buchanan et al., 2001. Biochemistry and Molecular Biology of plants.
2. Delvin ,RM. 1969. Plant Physiology. Affiliated East West Newyork Ltd.
3. Dennis, DT., DB. Layzell, DD. Lefebvre & D. Turpin. 1997. Plant Metabolism . 2nd Ed. Addison Wesley Pub Co. New York
4. Govindjee, ed. 1982-83. Photosynthesis. Vol I & II. Academic Press Inc. New York.
5. Hopkins, W. 1998. Introduction to Plant Physiology. ELBS & Longman, Essex., England.
6. Kocchar and Gujral. 2012. Comprehensive Plant Physiology. Mac Milan Pub.
7. Raghavendra, S. 1998. Photosynthesis: A Comprehensive Treatise. Cambridge University Press, Cambridge, UK
8. Salisbury, F.B. and C. S. Ross. 1992. Plant Physiology. 4th Ed. Worsworth Publishing & Co. , Belmont , California.
9. Taiz and E. Zeiger. 1998. Plant Physiology. 2nd Edition. Sinauer Associates Inc Publishers, Massachusetts, USA
10. Thomas C. Moore. 1992. Biochemistry and Physiology of Hormones. Narosa .
Wilmer, C.M. & M. Fricker. 1996. Stomata. 2nd Ed, Chapman Hall.

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SEMESTER –II

PAPER 201 : FUNGI, PLANT PATHOLOGY AND PLANT BREEDING

UNIT I: FUNGI

General characteristics and modern trends in fungal classification. Salient features and classification of Gymnomycota (Myxomycota). Mastigomycota, Deuteromycota and Amastigomycota (Zygomycotina, Ascomycotina, Basidiomycotina). Structure and reproduction of lichens and mycorrhizae; economic importance of fungi- beneficial and harmful; mushroom cultivation.

UNIT II: PLANT DISEASES (FUNGAL)

Classification of fungal diseases. Symptomatology of fungal diseases. Disease cycle and control measures of club rot of crucifers, rust of wheat, smut of sorghum, powdery mildew of grapes, red rot of sugarcane, leaf spot of groundnut. Control of fungal diseases- physical, chemical and biological methods. General account on Integrated Pest Management.

UNIT III: PLANT DISEASES (BACTERIAL AND VIRAL)

General characteristics and modern classification of bacteria. Plant diseases caused by bacteria- symptomatology and disease cycle of leaf blight of rice, blight of cotton, common scab of potato and citrus canker. Plant viruses: classification, transmission and control of plant viruses; a brief account on plant diseases caused by viruses- yellow mosaic of legumes, mosaic disease of tobacco, bunchy top of banana.

UNIT IV: PLANT BREEDING

Methods of Breeding for Self Pollinated and Vegetatively Propagated Crops. Pureline selection, Mass selection, Clonal Selection, Marker- assisted Selection. Hybridization, Pedigree method. Synthetic varieties. Methods of Breeding for Cross Pollinated Crops. Hybrid vigour, Inbreeding Depression and Genetic basis of Heterosis.

PRACTICALS

1. Study of gram negative and gram positive bacteria
2. Morphological study of different fungal spores
3. Study of symptomology of locally available diseased specimens
4. Plant Breeding Experiments

SUGGESTED READINGS:

1. Agrios, GN. 2005. Plant Pathology. 5th ed. Academic Press.
2. Ainsworth, G.C., E.K. Sparrow and A.S. Sussman. 1973. The Fungi- An Advanced Treatise. Academic Press.
3. Alexopolous, C.J., C.W. Mims & M. Blackwell 1996. Introductory Mycology. John Wiley & Sons.
4. Madigan, M.t. and John M.Martinko.2014. Brocks Biology of Microorganisms. 14th ed.Pearson Education.
5. David Allen Sleper & J.M. Poehlman. 2006. Breeding Field Crops. 5th Ed. John Wiley & Sons.
6. D.K. Maheswari. & R.C. Dube. 2013. Microbiology. S. Chand & Co. Ltd., New Delhi.
7. Gilbert, O.L. 2000. Lichens. Collins New Naturalist
8. Jens H. Peterson. 2013. The Kingdom of Fungi. Princeton University Press
9. Mehrotra, R.S. & K.R. Aneja. 1990. An Introduction to Mycology. Wiley Eastern Ltd.
10. Pandey, B.P. 2005. Plant Pathology. S.Chand & Company, New Delhi.
11. Pelczar, M.J., E.C.S. Chan &N.R. Krieg. 1986. Microbiology. Tata McGraw Hill, New Delhi.
12. Robert W.Allard. 1999. Plant Breeding. 2nd ed. John Wiley & Sons.
13. Singh, R.S. 2009. Introduction to Principles of Pathology. 4th ed.
14. Vashishta, B.R. 2002. Fungi. 11th ed. S.Chand & Co. New Delhi.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
PAPER 202 : MOLECULAR GENETICS AND TECHNIQUES IN BIOLOGY

UNIT I: INHERITANCE, RECOMBINATION AND MAPPING

Mendelian laws of inheritance- an overview. Genetic conventions, notations and terminology. Linkage, Chromosome as a linkage unit, factors affecting linkage; Genetic recombination: types and molecular mechanism of recombination. Factors affecting recombination. Chromosomal mapping; Two factor and Three factor mapping, Mapping by recombinational frequencies. Coefficient of coincidence of double crosses, Interference –types and significance.

UNIT II: MUTATION AND POPULATION GENETICS

Modern concept of gene, Mutations–types. Chromosomal structural aberrations: deficiencies, duplications, translocations, inversions and their significance in evolution. Numerical changes in chromosomes: aneuploidy and euploidy, polyploidy and their significance in evolution; molecular mechanism of mutagenesis.

UNIT III: pH, MICROSCOPY, CENTIFUGATION AND CHROMATOGRAPHY

pH- Measurement of pH, biochemical buffers, selection of biochemical buffer, oxygen electrode and biosensors. Principles and applications of Microscopy- Light microscope, Phase contrast and Electron microscope. Fixation and staining methods. Centrifugation – basic principles of sedimentation, Types of centrifuges. Preparative ultracentrifugation- differential centrifugation, density gradient, analytical ultracentrifugation and applications. General principles, definitions and applications of chromatography. Paper chromatography, thin-layer chromatography, gas-liquid chromatography.

UNIT IV: ELECTROPHORESIS, SPECTROSCOPY AND RADIO ISOTOPE TECHNIQUES

Principles, definition and applications of SDS-PAGE, Agarose gel electrophoresis. Laws of light absorption, Instrumentation and applications of UV-Visible spectrophotometer. Radioisotope Techniques –types of isotopes, radioactive decay. Detection and measurement of radioactivity. Autoradiography, Isotopes used in biology.

PRACTICALS

1. Problems related to Genetics
2. Separation and identification of amino acids by paper chromatography
3. Separation and identification of sugars by TLC
4. Separation and identification of Lipids by TLC
5. Separation of amino acids by Ion –exchange chromatography
6. Separation of proteins by PAGE
7. Separation of Pigments by paper chromatography
8. Isolation and spectrophotometric characterization of plant pigments.

SUGGESTED READINGS

1. Alberts A et al. 1994. Molecular Biology of cell. Garland publ. New York.
2. Cantor, C.R. and P.R. Schimmel. Biophysical Chemistry by , W.H. Freeman & Co.
3. Cooper Geoffrey, M. 2000. The Cell - a Molecular approach. 2nd Edn. ASM Press, Washington.
4. De Robertis EDP & EMF De Robertis . 2001. Cell and Molecular biology. Lippincott Williams & Wilkins.
5. Freifelder D. 1990. Molecular biology. Narosa publication house, New Delhi.
6. Gardner E J & D P Snustad 1996. Principles of Genetics. John Wiley, New York.
7. Glasel A. and M.P. Deutscher. 1995. Introduction to Biophysical Methods for Protein and Nucleic Acid Research. Academic Press.
8. John M. Wigglesworth. 1983. Biochemical research technique (A Practical Introduction)
9. Strickberger MW 1996. Genetics III edn. McMillan, New York.
10. Cooper, T.G. The tools of Biochemistry. Wiley Eastern.
11. Vanholdem, K.E. and W.C. Johnson. 1988. Principles of Physical Biochemistry. Wilson & Walker. 1986. Practical Biochemistry: Principles & Techniques. Cambridge University Press.

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PAPER 203 : PLANT BIOCHEMISTRY

UNIT I: BIOENERGETICS

Energy transformation in living systems, Laws of thermodynamics, free energy and standard free energy changes, Phosphate group transfer and ATP, free energy from hydrolysis of ATP, High energy phosphates as currency of cell. Biological oxidation-reduction reactions and their half reactions.

UNIT II: ENZYMES

Nomenclature and classification- Isoenzymes, structure; Ribonuclease, Lysozyme, Chymotrypsin. Mode of action of enzymes; enzyme-substrate complex Inhibition: Competitive, Non competitive and Feed back inhibition. Regulation of enzyme activity. Enzyme Kinetics: Michaelis- Menten equation and Reversible reactions.

UNIT III: CARBOHYDRATES AND PROTEINS

Classification and properties of carbohydrates of Mono (Glucose, Galactose, Fructose), Oligo (Lactose, Maltose, Sucrose) and Polysaccharides: Homopolysaccharides (Starch, Glycogen, Cellulose and Heteropolysaccharides. Gluconeogenesis. Amino acids: Non standard protein and aminoacids, peptides structure and reactions. Proteins: Primary structure and its sequence determination, Secondary, Tertiary and Quarternary structural features of proteins (Ramachandran plot).

UNIT IV: LIPID METABOLISM

Chemical composition of plant lipids. α - Oxidation and β - Oxidation of fatty acids. Biosynthesis of fatty acids - malonyl CoA and long chain saturated and unsaturated fatty acids.

PRACTICALS

1. Estimation of proteins in plant samples by Biuret or Lowry's method
2. Estimation of Reducing sugars in plant samples by Nelson's method.
3. Determination of Amylase activity in germinating seeds
4. Estimation of Amino acids by Ninhydrin method
5. Determination of Catalase activity in germinating seeds
6. Reaction of amino acids and sugars

SUGGESTED READINGS

1. Buchnan, Gruissen & Jones. 2001. Biochemistry and Molecular Biology of Plants.
2. Dennis, D.T., D.B. Layzell, D.D. Lefebrye & D. Turpin. 1997. Plant Metabolism. 2nd ed. Addison Wesley Pub. Co. New York.
3. Dey and Horborne. 1998. Plant Biochemistry. Academic Press.
4. Heldt, H.W. 1997. Plant Biochemistry and Molecular Biology. OUP.
5. Horton, HR, MoranLA, Ochs RS et al., 2001. Principles of Biochemistry, III edn. Prentice Hall.
6. Lehninger, A.L. 2001. Biochemistry. Kalyani Publishers. Ludhiana.

7. Mathews CK, Van Holde KE and Ahem KG. 2000. Biochemistry III edn. Sanfransico. Benjamin Cummings.
8. Thomas C. Moore. 1992. Biochemistry and Physiology of Plant Hormones. II Eds. Narosa Publishers.
9. Wilkins, M.B. (ed) 1987. Advanced Plant Physiology. ELBS & Longman. Essex., England.

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Re-Accredited by NAAC with Grade "A"
PAPER 204: OPEN ELECTIVE –I: PLANTS AND HUMAN WELFARE

UNIT I : PLANTS AND ENVIRONMENTAL VALUES

Plants-Ecosystem services. Direct, Indirect and optional (future possibilities of usage) services. Human civilization and Plants – Agriculture and Forestry. Plants and landscape ecology. Plants role in soil protection and water conservation. Role of plants in climate change scenario-carbon credits. Plants in combating pollution- as bioremediants. Poisonous plants. Aliens and invasive species.

UNIT II: PLANT RESOURCES

Brief account of the following plant Resources(examples limited to 10 under each category)- local,common and botanical names; morphology and utility Edible Resources- Cereals, Millets, Pulses, Spices and Condiments; Fruits and Nuts; Vegetables; Starch and Sugar Yielding Plants; Oil yielding plants.Plants yielding essential oils, saponins, fibres, cellulose products: gums, resins, rubber, tannins and dye yielding plants. Plants as sources of timber, biofuels and fire wood. Forage plants and Ornamental Plants.

UNIT III: PLANTS AND MEDICINE

Introduction, History, Scope and importance of Indigenous systems of medicine (Ethnomedicine, Traditional medicine, Ayurveda, Siddha, Unani), Homeopathy and Allopathy. Different types of crude drugs- based on origin,application and purpose/use. Wild and Potential Drug Yielding plants and their therapeutic values with reference to forests of AP. Phytomedicine and Applications; Importance of phytopharmaceuticals, Pharmacognosy-Principles, Identification of different constituents. Classification of Drugs . Analytical methods- drug adulteration and evaluation. Phytopharmacology and Molecular Farming

UNIT IV: PLANTS AS MODEL ORGANISMS

Introduction to model organisms.Types of model organisms. Genomic model organisms, Genetically modified organisms. Use of Model organism. Important model organisms- prokaryotes and Eukaryotes. E.coli., Chlamydomonas reinhardtii, Arabidopsis thaliana, Zea mays, Nicotiana benthamiana . Transgenic plants. Plants as bioreactors. Plantibodies.

SUGGESTED READINGS:

1. Alan beebay & anne- Maria Brennan. 2008. First Ecology. 3rd ed. Oxford University press.
2. Cotton CM. 1996. Ethnobotany: Principles and Applications
3. Cunningham, W.P. & M.A. Cunningham. 2007. Principles of Environmental Science- Inquiry and Applications. Tata Mc Graw Hill Publications. New Delhi.
4. Hill, Albertt, F. 1952. A Text Book of useful plants and plant products. Tata Mc Graw Hill Publications. New Delhi.
5. Kokate , C.K. AP. Purohit & SB .Gokhale. 2000. Pharmacognosy. Nirali Prakasan Publications.
6. Rao, RaviPrasad B. 2005. Biodiversity. In Pullaiah.T. (ed) Taxonomy of Angiosperms. Regency Publications. New Delhi. Pp: 287-317.
7. Sambamurthy, A.V.V. S. & N.S. Subbramaniyan 2000. Economic Botany of Crop Plants. Asiatech Publishers Inc.
8. Trease, GE. And WC. Evans. 2002. Pharmacognosy. Saunders. New York.

M.Sc. Chemistry

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M.Sc. ORGANIC CHEMISTRY (OC)

III Semester

(Effective from the academic year 2016-2017)

CHEM-OC: 301: PAPER I – ORGANIC SPECTROSCOPY

UNIT - I: UV - VISIBLE SPECTROSCOPY, ORD & CD

UNIT -II: IR & RAMAN SPECTROSCOPY

UNIT -III: ^1H NMR SPECTROSCOPY

UNIT- IV: MASS SPECTROMETRY

UNIT - I: UV - VISIBLE SPECTROSCOPY, ORD & CD

15 Hrs

UV AND VISIBLE SPECTROSCOPY: Various electronic transitions (185-800nm), effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dienes, conjugated polyenes. Fieser-woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls.

ORD: α -Axial haloketone rule and octant rule – Application of these rules in the determination of absolute configuration of cyclohexanones, decalones and cholestanones.

CIRCULAR DICHROISM: Principle – positive and negative cotton effects – Absolute configuration

UNIT -II: IR & RAMAN SPECTROSCOPY

15 Hrs

IR SPECTROSCOPY: Instrumentation and sample handling. Characteristic vibrational frequencies of alkanes, alkenes, alkynes, aromatic compounds, alcohols, ether, phenols and amines. Detailed study of vibrational frequencies of carbonyl compounds (Ketones, aldehydes, esters, amides, acids, anhydrides, lactones, lactams and conjugated carbonyl compounds). Effect of hydrogen bonding and solvent effect on vibrational frequencies, overtones, combination bands and Fermi resonance, FT-IR.

RAMAN SPECTROSCOPY: Characteristic frequencies of functional groups – Applications to identification of organic molecules-comparison of IR and Raman spectroscopy.

UNIT -III: ^1H NMR SPECTROSCOPY

15 Hrs

Nuclear spin, nuclear resonance, Saturation shielding of magnetic nuclei, chemical shifts and its measurements, factors influencing chemical shift, deshielding. Spin-spin interactions, factors influencing coupling constants 'J' classification (ABX, AMX, ABC, A_2B_2 etc.), spin decoupling, basic ideas about instrument, FT-NMR, advantages of FT-NMR

Applications of ^1H NMR : Shielding mechanism, mechanism of measurement, chemical shift values and correlation for protons bonded to carbon (aliphatic, olefinic, aldehydic and aromatic) and other nuclei (alcohols, phenols, enols, carboxylic acids, amines, amides, chemical exchange,

effect of deuteration, complex spin-spin interaction between two, three, four and five nuclei (First order spectra), virtual coupling, Stereochemistry, hindered rotation, Karplus curve variation of coupling constant with dihedral angle. Simplification of complex

spectra, nuclear magnetic double resonance, contact shift reagents, nuclear over Hauser effect (NOE).

¹³C NMR Spectroscopy: General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonyl carbon), coupling constants.

UNIT IV: MASS SPECTROMETRY

15 Hrs

Introduction, principle, instrumentation, single and double focusing mass spectrophotometer, Ionisation Methods EI, CI, FD, FAB Factors affecting fragmentation ion analysis, ion abundance, Molecular-ion peak, Nitrogen rule, Base peak, Metastable ion, Isotopic abundance, McLafferty rearrangement. Mass spectral fragmentation patterns of various classes of organic compounds, Alkanes, cyclo alkanes, alkenes, aromatic hydrocarbons, Aliphatic, Aromatic, Aldehydes, Ketones, Alcohols, phenols, aliphatic Aromatic Nitro compounds Nitrites, Nitrates, Nitriles.

References

1. Organic Spectroscopy, W. Kemp 5th Ed, ELBS.2.
2. Spectroscopy of organic compounds, RM Silverstein and other, 5th Ed, John Wiley 1991.
3. Spectroscopy of organic compounds, P.S. Kalsi, Wiley, 1993.
4. NMR in chemistry-A multi nuclear introduction, William Kemp, Mc. Millan, 1986.
5. Spectroscopy methods in organic chemistry, DH Williams & I Flemmi, TMH. 2005.
6. Nuclear Magnetic Resonance Spectroscopy An Introduction to Principles, Applications and experimental methods Joseph B. Lambert and Eugene P.Mzzola (pearson Education inc. Prentice – Hall).
7. Understanding Mass Spectra: A Basic Approach, R. Martin Smith, Second Edition, A (John Wiley & Sons, Inc.).

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CHOICE BASED CREDIT SYSTEM
SECOND YEAR M.Sc. CHEMISTRY
M.Sc. ORGANIC CHEMISTRY (OC)
III Semester
(Effective from the academic year 2016-2017)

CHEM-OC: 302: Paper II – MODERN ORGANIC SYNTHESIS

UNIT -I: ORGANO PHOSPHOROUS AND ORGANO SULPHUR COMPOUNDS

UNIT -II: NEW SYNTHETIC REACTIONS

UNIT -III: NEW TECHNIQUES AND CONCEPTS IN ORGANIC SYNTHESIS:

UNIT -IV: SYNTHETIC STRATEGIES

UNIT -I: ORGANO PHOSPHOROUS AND ORGANO SULPHUR COMPOUNDS

15 Hrs

Properties of divalent sulphur and trivalent phosphorous derivatives, nucleophilic reactivities, hard and soft acids and bases, compounds containing phosphorous-oxygen bonds, the phosphoroyl group, molecules with hydrogen bonded to phosphoroyl group, Arbuzov reactions, Perkov reactions, compounds containing sulphur-oxygen bonds, sulfoxides and sulfones-Pummerer rearrangements, sulfoxides as oxidizing agents, phosphorous ylides, Wittig's reactions and mechanism, the Emmons-Wadsworth reaction, reactions of sulphur ylides.

UNIT -II: NEW SYNTHETIC REACTIONS

15 Hrs

(i)Protecting Groups: (a) Protection of alcohols by ether, silyl ether and ester formation
(b) Protection of 1,2-diols by acetal, ketal and carbonate formation (c) Protection of amines by acetylation, benzylation, benzyloxycarbonyl, t-butyloxycarbonyl, fmoc and triphenyl methyl groups, (d) Protection of carbonyls by acetal, ketal and thiol acetal (Umpolung) groups,
(e) Protection of carboxylic acids by ester and ortho ester (OBO) formation.
(ii)Baylis-Hillman reaction, RCM olefin metathesis, . Stork-enamine reaction and Umpolung use of dithio acetals.

UNIT -III: NEW TECHNIQUES AND CONCEPTS IN ORGANIC SYNTHESIS

15 Hrs

Solid phase polypeptide synthesis, Solid phase oligonucleotide synthesis, Strategies in oligosaccharide synthesis, Kahne glycosidation, Combinatorial synthesis, Phase transfer catalysis, Tandem synthesis, Baldwin rules, Chiron approach in synthesis, Transformations using esterases and lipases, Determination of absolute configuration (R/S) using Mosher's method and Felkin-Anh model. Use of protecting groups in organic synthesis: fmoc, t-BOC, TBDMS and THP.

UNIT -IV: SYNTHETIC STRATEGIES

15 Hrs

Synthetic Strategies, Terminology: target, synthon, synthetic equivalent, functional group interconversion (FGI), functional group addition, functional group elimination. Criteria for selection of target. Linear and convergent synthesis. Retrosynthetic analysis and synthesis

involving chemoselectivity, regioselectivity, reversal of polarity and cyclizations. Strategic bond: Criteria for disconnection of strategic bonds. Importance of the order of events in

organic synthesis. One group and two group C-X disconnections. One group C-C disconnections. Alcohol and carbonyl compounds. Two group C-C disconnections; DielsAlder reaction, 1,3-difunctionalised compounds, Control in carbonyl condensation, 1,5- difunctionalised compounds, Michael addition and Robinson annulation, synthesis of (+) Disparlure by retro synthetic approach.

Recommended Books:

1. Some modern methods of organic synthesis by W Carruthers
2. Guidebook to organic synthesis, by R K Meckie, D M Smith & R A Atken
3. Organic synthesis by O House
4. Organic synthesis by Michael B Smith
5. Reagents for organic synthesis, by Fieser & Fieser, Vol 1-11(1984)
6. Organic synthesis by Robert E Ireland
7. Organic Synthesis - The disconnection approach by S Warren
8. Organic Synthesis by C Willis and M Willis
9. Handbook of reagents for organic synthesis by Reich and Rigby, Vo I, IV
10. Problems on organic synthesis by Stuart Warren
11. Total synthesis of natural products: the Chiron approach by S.Hanessian
12. Organic chemistry Claydon and others 2005
13. Name Reactions by Jie Jack Li
14. Reagents in Organic synthesis by B.P.Mundy and others.
15. Tandem Organic Reactions by Tse-Lok Ho
16. Advanced Organic Chemistry-Reactions and Mechanism, 2nd Ed. By Bernard Miller and Rajendra Prasad (Pages 397-414).

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M.Sc. ORGANIC CHEMISTRY (OC)
III Semester
(Effective from the academic year 2016-2017)

CHEM-OC: 303: PAPER III – CONFORMATIONAL ANALYSIS, ASYMMETRIC SYNTHESIS AND ORGANIC PHOTOCHEMISTRY

UNIT -I: CONFORMATIONAL ANALYSIS (CYCLIC SYSTEMS)

UNIT -II: PRINCIPLES OF ASYMMETRIC SYNTHESIS

UNIT -III: METHODOLOGY OF ASYMMETRIC SYNTHESIS

UNIT -IV: ORGANIC PHOTOCHEMISTRY

UNIT -I: CONFORMATIONAL ANALYSIS (CYCLIC SYSTEMS) 15 Hrs

Study of conformations of cyclohexane, mono, di and polysubstituted cyclohexanes, cyclohexene, cyclohexanone (2-alkyl and 3-alkyl ketone effect), 2-halocyclohexanones, cyclopentane, cyclobutane, cycloheptane, cyclooctane, cyclononane, cyclodecane. Stereochemistry of decalins, bicyclo[3,3,0]octane and hydrindanes, perhydroanthracene. Conformational structures of piperidine, N-Methylpiperidine, tropane, tropine, pseudotropine, decahydroquinoline and quinolizidine. Conformational effects on the stability and reactivity of diastereomers in cyclic molecules - steric and stereo electronic factors – examples. Factors governing the reactivity of axial and equatorial substituents in cyclohexanes. Stereochemistry of addition to the carbonyl group of a rigid cyclohexanone ring.

UNIT -II: PRINCIPLES OF ASYMMETRIC SYNTHESIS 15 Hrs

Introduction and terminology: Topocity in molecules Homotopic, stereoheterotopic (enantiotopic and diastereotopic) groups and faces- symmetry, substitution and addition criteria. Prochirality nomenclature: Pro-R, Pro-S, Re and Si. Selectivity in synthesis: Stereospecific reactions (substrate stereoselectivity). Stereoselective reactions (product stereoselectivity): Enantioselectivity and diastereoselectivity. Conditions for stereoselectivity: Symmetry and transition state criteria, kinetic and thermodynamic control. Methods for inducing enantio and diastereoselectivity. Analytical methods: % Enantiomer excess, % enantioselectivity, optical purity, % diastereomeric excess and % diastereoselectivity. Techniques for determination of enantioselectivity: Specific rotation, Chiral ^1H NMR, Chiral lanthanide shift reagents and Chiral HPLC.

UNIT -III: METHODOLOGY OF ASYMMETRIC SYNTHESIS 15 Hrs

Classification of asymmetric reactions into 1. substrate controlled, 2. chiral auxiliary controlled, 3. chiral reagent controlled and 4. chiral catalyst controlled. 1. Substrate controlled asymmetric synthesis: Nucleophilic additions to chiral carbonyl compounds. 1, 2- asymmetric induction, Cram's rule and Felkin-Anh model. 2. Chiral auxiliary controlled asymmetric synthesis: α -Alkylation of chiral enolates, azaenolates, imines and hydrazones. Chiral sulfoxides. 1, 4- Asymmetric induction and Prelog's rule. Use of chiral auxiliaries in Diels-Alder and Cope

reactions. 3. Chiral reagent controlled asymmetric synthesis: Asymmetric reductions using BINAL-H. Asymmetric hydroboration using IPC2 BH and IPCBH2. Reductions with CBS reagent. 4. Chiral catalyst controlled asymmetric synthesis: Sharpless, Jacobsen and Shi asymmetric epoxidations. Sharpless asymmetric dihydroxylation

and amino hydroxylation. Asymmetric hydrogenations using chiral Wilkinson biphosphine and Noyori catalysts. Chiral catalyst controlled Diels- Alder reactions, Enzyme mediated enantioselective synthesis: 5. Asymmetric aldol reaction, Diastereoselective aldol reaction and its explanation by Zimmerman-Traxel model. Auxiliary controlled aldol reaction. Double diastereoselection matched and mismatched aldol reactions.

UNIT IV: ORGANIC PHOTOCHEMISTRY

15 HRS

Photochemistry of π, π^* transitions: Excited states of alkenes, cis-trans isomerisation, photostationary state, electrocycloaddition and sigmatropic rearrangements, di- π methane rearrangement. Intermolecular reactions, photocycloadditions, photodimerisation of simple and Conjugated olefins. Photoisomerisation of benzene Photochemistry of n, π^* transitions: Excited states of carbonyl compounds, homolytic cleavage of α - bond Norrish type I reaction in acyclic and cyclic ketones and strained cycloalkanediones. Intermolecular abstraction of hydrogen: photoreduction and photooxidation- influence of temperature, solvent and nature of hydrogen donor and structure of the substrate Intramolecular abstraction of hydrogen: Norrish type II reaction, Addition to carbon-carbon multiple bonds, Paterno-Buchi reaction, Photochemistry of nitrites-Barton reaction.

Recommended Books:

1. Stereochemistry of organic compounds — Principles & Applications by D Nasipuri
2. The third dimension in organic chemistry, by Alan Bassendale
3. Stereochemistry: Conformation & Mechanism by P S Kalsi
4. Stereochemistry of Carbon compounds by Ernest L Eliel
5. Stereoselectivity in organic synthesis by R S Ward.
6. Asymmetric synthesis by Nogradi
7. Asymmetric organic reactions by it) Morrison and HS Moschr
8. Stereo differentiating reactions by Izumi
9. Some modern methods of organic synthesis by W Carruthers
10. Guidebook to organic synthesis, by R K Meckie, D M Smith & R A Atken
11. Organic synthesis by Michael B Smith
12. Molecular Reactions and Photo chemistry by Depuy and Chapman
13. Photochemistry by C W S Wells
14. Molecular Photochemistry by Gilbert & Baggo
15. Organic Photochemistry by D Coyle

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M.Sc. ORGANIC CHEMISTRY (OC)
III Semester
(Effective from the academic year 2016-2017)

CHEM-OC: 304: Paper IV – BIO-ORGANIC CHEMISTRY

UNIT -I: MECHANISM OF ENZYMIC ACTION

UNIT -II: RECOMBINANT DNA AND FERMENTATION TECHNOLOGY

UNIT -III: COENZYMES

UNIT -IV: AMINO ACIDS AND PROTEINS

UNIT -I: MECHANISM OF ENZYMIC ACTION

15 Hrs

Transition state theory. Acid-Base catalysis. Co-valent catalysis— Binding modes of catalysis (i) Proximity effect (ii) Transition state stabilization (iii) Strain and Distortion. Examples of some typical enzyme mechanisms for (i) Triose phosphate isomerase (ii) α -chymotrypsin and serine protease (iii) Lysozyme (iv) Carboxy peptidase-A (v) Ribonuclease. Synthesis of α - amino acids and peptides. Transformations of lipases and esterases. C-C bond formation: asymmetric cyanohydrin formation and asymmetric aldol condensations using enzymes.

UNIT -II: RECOMBINANT DNA AND FERMENTATION TECHNOLOGY

15 Hrs

Introduction to genetic engineering. Recombinant DNA technology-restriction endonuclease, cloning, linkers, adaptors. Application of recombinant DNA technology in production of pharmaceuticals, diagnosis of diseases, insect control, improved biological detergents, gene therapy-examples. Principles of finger printing technology- Site directed mutagenesis. Fermentation technology: Introduction to fermentation. Industrial fermentation. Advantages and limitations of fermentation. Production of drugs and drug intermediates from fermentation examples. Chiral hydroxy acids, vitamins, amino acids, β -lactam antibiotics. Precursor fermentation and microbial oxidation and reductions.

UNIT -III: COENZYMES

15 Hrs

Introduction. Cofactors — cosubstrates — prosthetic groups. Classification — Vitamin derived coenzymes and metabolite coenzymes. Structure and biological functions of coenzyme A, thiamine pyrophosphate (TPP), pyridoxal phosphate (PLP), oxidized and reduced forms of i) nicotinamide adenosine dinucleotide / their phosphates (NAD^+ , NADH , NADP^+ , NADPH) ii) Flavin adenine dinucleotide FAD , FADH_2 and iii) Flavin mononucleotide (FMN , FMNH_2), lipoic acid, biotin, tetrahydrofolate. Adenosine triphosphate (ATP) and adenosine diphosphate (ADP), S-adenosyl methionine (SAM) and uridine di phospho sugars (UDP-sugars) Mechanism of reactions catalysed by the above coenzymes.

UNIT: IV: AMINO ACIDS AND PROTEINS**15 Hrs**

Amino acids: Introduction - Classification of amino acids. General methods of preparations – Gabriel's phthalimide synthesis, Strecker's synthesis, Malonic ester synthesis Erlenmeyer azalactone synthesis. Analysis of amino acids from protein hydrolysates. General properties and reactions of amino acids –isoelectric point.

PROTEINS: General nature of proteins – annealing, Biuret reaction, Ninhydrin test. Classification of proteins. Merrified solid phase peptide synthesis. Primary, secondary, tertiary and quaternary structure of proteins.

Recommended Books

1. Concepts in biotechnology by D. Balasubramanian & others
2. Principles of biochemistry by Horton & others.
3. Bioorganic chemistry - A chemical approach to enzyme action by Herman Dugas and Christopher Penney.
4. Chirrotechnology by R.Sheldon
5. Organic synthesis in water by Paul A. Grieco Blackie.
6. Burger's medicinal chemistry and drug discovery by Manfred E. Wolf
7. Introduction to Medicinal chemistry by Graham Patrick.
8. Introduction to drug design by R.B.Silverman
9. Comprehensive medicinal chemistry. Vol 1-5 by Hanzsch.

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SECOND YEAR M.Sc. CHEMISTRY

M.Sc. ORGANIC CHEMISTRY (OC)

IV Semester

(Effective from the academic year 2016-2017)

**CHEM-OC: 401: Paper I – ADVANCED ORGANIC SPECTROSCOPY AND
NANOMATERIALS**

UNIT -I: ^{13}C NMR SPECTROSCOPY

UNIT -II: MULTIPULSE TECHNIQUES IN NMR SPECTROSCOPY

UNIT -III: 2D NMR TECHNIQUES

UNIT -IV: NANOMATERIALS

UNIT -I: ^{13}C NMR SPECTROSCOPY

15 Hrs

CW and PFT techniques. Types of ^{13}C NMR spectra: uncoupled, proton- decoupled, single frequency off-resonance decoupled (SFORD) and selectively decoupled spectra, signal enhancement by Nuclear Overhauser effect. ^{13}C chemical shifts, factors affecting the chemical shifts, chemical shifts of organic compounds. Calculation of chemical shifts of alkanes, alkenes and alkynes. Homonuclear (^{13}C , ^{13}C J) and heteronuclear (^{13}C , ^1H J and ^{13}C - ^2H J) coupling. Applications of ^{13}C -NMR spectroscopy: Structure determination, stereochemistry, reaction mechanisms and dynamic processes in organic molecules.

UNIT -II: MULTIPULSE TECHNIQUES IN NMR SPECTROSCOPY

15 Hrs

Spin echo experiment, ^{13}C NMR spectral editing technique, Polarization Transfer and signal enhancement, principle and applications of SPT, APT, INEPT and DEPT methods, 1D-INADEQUATE, application to Geraniol molecule.

UNIT -III: 2D NMR TECHNIQUES

15 Hrs

2D-NMR techniques: Principles of 2-D NMR, Classification of 2D-experiments. 2D-J-resolved spectroscopy. Homonuclear and Heteronuclear 2D-J-resolved spectroscopy. Correlation spectroscopy (COSY) Homo COSY (^1H - ^1H COSY) , TOCSY (Total Correlation Spectroscopy), Hetero COSY (^1H , ^{13}C COSY, HMQC), long range ^1H , ^{13}C COSY (HMBC), NOESY and 2D-INADEQUATE experiments and their applications.

UNIT IV: NANOMATERIALS

15 Hrs

Introduction and definition of nanoparticles and nanomaterials, classification of nanomaterials, chemical routes for synthesis of nanomaterials, chemical precipitation and co-precipitation, metal nanocrystals by reduction, Sol-gel synthesis, Microemulsions or Reverse micelles, Hydrothermal synthesis, characterization of nanomaterials, X-ray diffraction(XRD), Scanning Electron Microscopy(SEM), Transmission Electron Microscopy(TEM), Atomic Force Microscopy(AFM), Properties of nanomaterials-magnetic, electrical, optical and mechanical, applications of nanomaterials-Bio-medicinal, chemical and environmental.

References

1. Spectroscopic identification of organic compounds by RM Silverstein, G C Bassler and T B Morrill
2. Organic Spectroscopy by William Kemp
3. Spectroscopic methods in Organic chemistry by DH Williams and I Fleming
4. Modern NMR techniques for chemistry research by Andrew B Derome
5. NMR in chemistry - A multinuclear introduction by William Kemp
6. Spectroscopic identification of organic compounds by P S Kalsi
7. Introduction to organic spectroscopy by Pavia
8. Carbon-13 NMR for organic chemists by GC Levy and O L Nelson
9. Spectroscopy of organic compounds, RM Silverstein and others, 5th Ed, (John Wiley)
10. NMR Spectroscopy An Introduction to Principles, Applications and experimental methods, Joseph B. Lambert and Eugene P. Mazzola (Pearson Education Inc. Prentice – Hall).
11. A Complete Introduction to Modern NMR Spectroscopy, Roger S. Macomber, A (John Wiley & Sons, Inc.).
12. Modern Spectroscopy, M. Hollas (John Wiley)
13. Introduction to molecular Spectroscopy, G. M. Barrow (McGraw Hill)
14. Basic principles of Spectroscopy, R. Chang (McGraw Hill).
15. NMR Spectroscopy by Gunther.
16. NMR Spectroscopy by Attar-ur-Rahman
17. NanoChemistry : A Chemical Approach to Nanomaterials; G. A. Ozin, A. C. Arsenault and L. Cademartiri (Royal Society of Chemistry)
18. Nanocomposite Science and Technology; P. M. Ajayan, L.Z. Schadler and P. V. Brown (Wiley)
19. Nanoparticles: From Theory to Applications; G. Schmidt (Wiley)
20. Nanotechnology: Nanostructures and Nanomaterials M. Balakrishna Rao, K. Krishna Reddy campus books international First Edition (2009)
21. Charles .Poole Jr. Frank J. Owens, Introduction to Nanotechnology (2nd Edition) Wiley-India edition Delhi-2008
22. Characterization of Nanophase Materials; Z. L. Wang (ed.) (Wiley-VCH)

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M.Sc. ORGANIC CHEMISTRY (OC)

IV Semester

(Effective from the academic year 2016-2017)

CHEM-OC: 402: Paper II – DRUG & MEDICINAL CHEMISTRY

UNIT -I: PRINCIPLES OF DRUG DESIGN AND DRUG DISCOVERY

UNIT -II: STRUCTURE ACTIVITY RELATIONSHIP (SAR) STUDIES

UNIT -III: QUANTITATIVE STRUCTURE- ACTIVITY RELATIONSHIP (QSAR) STUDIES

UNIT -IV: MEDICINAL CHEMISTRY

UNIT -I: PRINCIPLES OF DRUG DESIGN AND DRUG DISCOVERY 15 Hrs

Introduction to drug discovery. Folklore drugs. Natural products as lead structures in drug discovery. Structure pruning technique in lead modification e.g. morphine. Serendipitous discovery of leads e.g. Penicillin and Librium. Drug targets and receptor theory. Nature of drug-receptor interactions. Pharmacodynamics and pharmacokinetics (ADME) of drugs. Agonists, antagonists and enzyme inhibitors. Discovery of lead structure from natural hormones and neurotransmitters. Existing drugs as leads (me too drugs). Principles of design of agonists (e.g. Salbutamol), antagonists e.g. cimetidine) and enzyme inhibitors (e.g. captopril). Principles of prodrug design. Molecular graphics based lead discovery. Introduction to drug patents and Clinical trials.

UNIT -II: STRUCTURE ACTIVITY RELATIONSHIP (SAR) STUDIES 15 Hrs

1. Binding role of hydroxy group, Amino group, aromatic ring, double bond, ketones and amides. 2. Variation of substituents- alkyl substituents, aromatic substituents, extension of structure, chain extension/contraction, ring expansion/contraction, ring variation, ring fusion. Isosteres. iii. Simplification of the structure, rigidification, conformational blockers, X-ray crystallographic studies. Ex: A case study of Oxamiquine (schistosomiasis), Sulpha drugs (antibacterial), Benzodiazepines (Hypnotics) and Taxol analogues (anticancer drugs).

UNIT -III: QUANTITATIVE STRUCTURE- ACTIVITY RELATIONSHIP (QSAR) STUDIES 15 Hrs

QSAR parameters – Physicochemical parameters- Lipophilicity - Electronic parameters, Steric parameters, effect of electronic and steric parameters on lipophilicity. Methods used in QSAR studies- Linear free energy relationship (LFER) – Partial Least Squares Method – Multivariate Statistics – Correlation – Regression – Principal Component Analysis - Cluster significant analysis - Application of Hammett equation, Hansch analysis, significance of slopes and intercepts in Hansch analysis.

UNIT -IV: MEDICINAL CHEMISTRY

15 Hrs

Introduction, sources of natural leads and their structural modification to semisynthetic/synthetic drugs. 1) Drugs acting on nervous system a) CNS : i) morphine alkaloids. Structural pruning technique – eg. Morphine. b) PNS : i) Cocaine, benzocaine, 2) Neuromuscular blocking agents : curare alkaloids, tubocurarine, 3) Anticancer drugs: i) Catharanthus alkaloids, vinblastine, ii) Taxol. 4) Antibiotics : i) β -Lactam antibiotics – penicillin, cephalosporins and their semisynthetic derivatives (amoxicillin, methicillin,

cephalexin) 5) Cardiovascular drugs : i) lovastatin 6) Antiasthma drugs : i) Ephedrine, isoprenaline and salbutamol. 7) Antiparasitic drugs : i) Artemisinin, artemether and artether. ii) Quinine, pamaquine,.

References

1. Drug design By E.J. Arienes
2. Jenkin's quantitative pharmaceutical chemistry By Knevel and Dryden
3. Recent advances in Bioinformatics by I. A. Khan and A Khanum
4. Molecular modelling By Hans Dieter Holtje and Gerd Folkers
5. Molecular modelling By Leach
6. Bio Informatics by Rastogi
7. The Science and practice of Pharmacy – Vol I and Vol II by Remington
8. Burger's medicinal chemistry and drug discovery by Manfred E. Wolf.
9. Introduction to Medicinal chemistry by Patrick.
10. Introduction to drug design. By Silverman
11. Comprehensive medicinal chemistry. Vol 1-5 by Hanzsch.
12. Principles of medicinal chemistry. By William Foye
13. Biochemical approach to medicinal chemistry by Thomas Nogrady.

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CHOICE BASED CREDIT SYSTEM

SECOND YEAR M.Sc. CHEMISTRY

M.Sc. ORGANIC CHEMISTRY (OC)

IV Semester

(Effective from the academic year 2016-2017)

**CHEM-OC: 403: Paper III –ORGANIC SYNTHESIS CHEMISTRY AND GREEN
CHEMISTRY**

UNIT -I: HETEROCYCLIC CHEMISTRY – II

UNIT- II: REACTION MECHANISM – II

UNIT -III: NEW SYNTHETIC REACTIONS

UNIT -IV: GREEN CHEMISTRY

UNIT - I : HETEROCYCLIC CHEMISTRY – II

15 Hrs

Synthesis and reactivity of the following Heterocycles : 1,2,3-triazole, 1,2,4-triazole, 1,2,4-oxadiazole, 1,3,4-oxadiazole, 1,2,3-thiadiazole, 1,2,3-triazine. Synthesis and reactivity of benzodiazepines, benzoxepines and benzothiepinines.

UNIT- II: REACTION MECHANISM – II:

15 Hrs

a) Addition to carbon-carbon multiple bonds- Addition involving symmetrical and unsymmetrical reagents, Addition of halogens to alkenes, evidence for haonium ion intermediacy, stereoselectivity and specicicity, Syn addition reagents ike KMnO_4 , OsO_4 , Anti addition – Epoxidation followed by ring opening.

b) Elimination reactions: E_2 , E_1 , E_1CB mechanisms. Orientation and stero -selectivey in E_2 elimination reactions. Pyrolytic *syn* elimination and α elimination. Elimination vs. substitution.

UNIT -III: NEW SYNTHETIC REACTIONS

15 Hrs

Baylis–Hillman reaction, RCM olefm metathesis, Grubb catalyst, Mukayama aldol reaction, Mitsunobu reaction, McMurrey reaction, Julia–Lythgoe olefination, and Peterson's stereoselective olefination, Heck reaction, Suzuki coupling, Stille coupling and Sonogishira coupling, Buchwald–Hartwig coupling. Ugi reaction, Click reaction.

UNIT -IV: GREEN CHEMISTRY

15 Hrs

Introduction: Principles, atom economy and scope. Introduction to alternative approaches. Solvent free reactions-principle, scope, utility of solvent free conditions, controlling solvent free reactions. Microwave activation-benefits, limitations, equipment, microwave effects- according to reaction medium and according to reaction mechanism. a) Solvent free microwave assisted organic synthesis: Introduction, solvent free techniques- Reactions on solid mineral supports, solid-liquid phase-transfer catalysts-Reactions without solvent support or catalyst. Examples of reactions on solid supports, PTC, reactions without support or catalyst— deacetylation, deprotection , saponification of esters, alkylation of reactive methylene compounds, synthesis of nitriles from aldehydes, reductions. b) Microwave assisted reactions in water — Hoffmann elimination, hydrolysis, oxidation, saponification reactions. c) Microwave assisted reactions in

organic solvents — Esterification reactions, Fries rearrangement, Orthoester Claisen rearrangement, Diels- Alder reaction, decarboxylation. Ultrasound assisted reactions: introduction, substitution reactions, addition, oxidation, reduction reactions.

Recommended Books

1. Mechanism and theory in Organic Chemistry, T.M.Lowry, K.C.Richardson, Harper and Row.
2. Physical Organic chemistry, N.S.Isaacs
3. The Physical basis of Organic Chemistry by H.Maskill.
4. Physical Organic Chemistry by Jack Hine.
5. New trends in green Chemistry by V.K.Ahluwalia

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SECOND YEAR M.Sc. CHEMISTRY
M.Sc. ORGANIC CHEMISTRY (OC)
IV Semester
(Effective from the academic year 2016-2017)

CHEM: OC: 404: PAPER-IV– TERPENOIDS, STERIODS, ALKALOIDS
AND FLAVONOIDS

UNIT- I: TERPENOIDS

UNIT - II: ALKALOIDS

UNIT -III: STERIODS

UNIT-IV: FLAVONOIDS

UNIT: I: TERPENOIDS

15 Hrs

Occurrence, Isolation general methods of structural determination isoprene rule special iso prene rule, structure determination and stereochemistry and synthesis of the following molecules:
1.Santonin 2. Farnesol 3. Zingiberene 4. Cadinene

UNIT II: ALKALOIDS

15 Hrs

Occurrence, Isolation general methods of structure elucidation and physiological action , degradation , classification based on nitrogen heterocyclic ring, structure, role of alkaloids in plants stereochemistry, synthesis and bio synthesis are the following :1. Nicotine 2. Morphine 3. Strychnine and 4.Reserpine

UNIT III : STERIODS

15 Hrs

Occurrence, Isolation general methods of structure elucidation and synthesis of cholesterol (total synthesis not expected) Androsterone, Testosterone, Estrone , Progesterone.

UNIT IV: FLAVONOIDS AND ISOFLAVONOIDS

15 Hrs

Occurrence nomenclature and geneal methods of structure determination, isolation and synthesis of 1. Apigenin, 2. Luteolin, 3. Kaempferol 4. Quercetin 5. Buten, 6.Daidzein
Biosynthesis of Flavonoids and Isoflavonoids: Acetate pathway and shikimic acid pathway.

References:

1. Comprehensive Organic Chemistry by D.R. Barton and W.D.Ollis.
2. Standard methods in plant analysis by Reach and Tracey.
3. Natural Products by Kalsi.
4. Text book of Organic Chemistry VOL II by I.L.Finar.
5. An Introduction to the Chemistry of terpenoids and Steroids by William Templeton.
6. Systematic identification of flavonoid Compounds by Markhan.&Mabry
7. Steroids by Fieser and Fieser.

8. Alkaloids by Manske.
9. Alkaloids by Bently.
10. The Chemistry of terpenes by A.R.Pinder.
11. The Terpenes by Simenson.

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)
SECOND YEAR M.Sc. CHEMISTRY
(w.e.f. 2016 - 2017)

RECOMMENDED PRACTICALS AND REFERENCE BOOKS

LABORATORY COURSE – II

90 hrs (3 h / w)

Semester – III: Practical Paper – III

Organic Qualitative Mixture Analysis: Separation of two component mixtures by chemical methods and their identification by chemical reactions – Separation by using solvent ether, 5% aqueous sodium bicarbonate, 5% sodium hydroxide and dil hydrochloric acid, checking the purity of the two components by TLC, identification of the compounds by a systematic study of the physical characteristics (MP/BP), extra elements (Nitrogen, halogens and sulfur), Solubility, functional groups, preparation of crystalline derivatives and identification by referring to literature. A minimum of Ten mixtures should be separated and analyzed by these procedures.

The following Experiments for Demonstration purpose only

- (a) Thin Layer Chromatography: Determination of purity of a given sample, monitoring the progress of chemical reactions, identification of unknown organic compounds by comparing the R_f values of known standards.
- (b) Separation by Column chromatography: Separation of a mixture of ortho and Para nitro anilines using silicagel as adsorbant and chloroform as the eluent. The column chromatography should be monitored by TLC.
- (c) Paper Chromatography

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SECOND YEAR M.Sc. CHEMISTRY

(w.e.f. 2016 - 2017)

Semester – III: Practical Paper – IV

100 Marks

Organic Quantative Estimations

1. Estimation of Phenol
2. Estimation of Glucose
3. Estimation of Aniline
4. Estimation of Ketone
5. Determination of Saponification value
6. Determination of Acid/Iodine value
7. Determination of Paracetamol

The following experiments for demnonstration purpose only

Isolation and identification of Natural products

1. Isolation of Caffeine from tea leaves
2. Isolation of Asperdine from lemon peel
3. Isolation of euginol from cloves
4. Isolation of piperines from black pepper
5. Isolation of casein and lactose from milk

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SECOND YEAR M.Sc. CHEMISTRY
(w.e.f. 2016 - 2017)

Semester – IV: Practical Paper – V

(a) Spectral identification of organic compounds

Spectral identification of unknown organic compounds by interpretation of IR, UV, ^1H NMR, ^{13}C NMR and mass spectral data. A Minimum of 30 representative examples should be studied.

(b) Multi step synthesis of Organic compounds

The exercises should illustrate the use of organic reagents and may involve purification of the products by chromatographic techniques.

1. Beckmann rearrangement: Benzanilide from Benzophenone
Benzophenone $\rightarrow$ Benzophenone oxime $\rightarrow$ Benzanilide
2. Benzilic acid rearrangement: Benzilic acid from benzoin
Benzoin $\rightarrow$ Benzil $\rightarrow$ Benzilic acid
3. P-Bromo Aniline from Aniline
Aniline $\rightarrow$ Acetanilide $\rightarrow$ P-Bromo Acetanilide $\rightarrow$ P-Bromo Aniline
4. Synthesis of Paracetamol
5. Synthesis of Phenytoin

Recommended Text Books and Reference Books

Organic Chemistry

1. Organic Chemistry By R T Morrison and R.N.Boyd
2. Organic Chemistry by T.J.Solomons
3. Organic Chemistry by L.G.Wade Sr
4. Organic Chemistry by D.Cram, G.S.Hammond and Herdricks
5. Modern Organic Chemistry by J.D.Roberts and M.C.Caserio
6. Text book of Organic Chemistry by Ferguson
7. Problems and their solutions in organic Chemistry by I.L.Finar
8. Reaction mechanisms in Organic Chemistry by S.M.Mukherji and S.P.Singh

M.A English

KVR GOVT COLLEGE FOR WOMEN,KURNOOL **(AUTONOMOUS)**

MA in English - Restructured Course

(Effective from the 2015-2017 Batch)

Third Semester

1. Commonwealth Literature-I (100 marks)
2. American Literature-II (100 marks)
3. Indian Literature in English Translation (100 marks)
4. Literary Criticism and Theory-I (100 marks)
5. Introduction to Linguistics (100 marks)

Fourth Semester

1. Commonwealth Literature-II (100 marks)
2. Literary Criticism and Theory-II (100 marks)
3. ELT (100 marks)

and

PROJECT (200 marks)

[18 papers and one project 2000 marks]

KVR GOVT COLLEGE FOR WOMEN, KURNOOL

(AUTONOMOUS)

MA English - Restructured Course

(Effective from the 2015-2017 Batch)

SEMESTER-III

PAPER 3.1: COMMONWEALTH LITERATURE-I

(Excluding Indian English Literature)

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. A.D. Hope

Australia

The Death of the Bird

2. Judith Wright

UNIT-II

3. Chinua Achebe

Things Fall Apart

UNIT-III

.

4 Wole Soyinka

Kongi's Harvest

UNIT IV

.

5. Alice Munro

Lives of Girls and Women

PAPER 3.2: AMERICAN LITERATURE-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Robert Frost	After Apple-picking
	Birches
	Home Burial

UNIT-II

4. Toni Morrison	Sula

UNIT- III

5. Emily Dickinson	76,214,241,712 (from Selected Poems of Emily Dickinson)

UNIT-IV

6. Arthur Miller	Death of a Salesman

PAPER 3.3: INDIAN LITERATURE IN ENGLISH TRANSLATION

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Subramania Bharathi	Phoenix
	Deception? Truth?
	Sound the Tocsin
2. Sri Sri	To Poesy : A Rhapsody
(Trans. by the author)	The March of History
	Forward March

UNIT-II

3 Thakazhi Sivasankara Pillai	Chemmeen
4. Volga	'Vimukta Kadh Samputi'

UNIT-III

5. S.L. Bhyrappa	Vamsavruksha
6 Vijay Tendulkar	Silence!!! The court is in session

UNIT-IV

9. Mahasweta Devi	<u>Hazaar Chaurasi Ki Maa</u> (1998)
10. Mahesh Dattani	Tara

PAPER 3.4: LITERARY CRITICISM AND THEORY-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Aristotle	Poetics

UNIT-II

2. Samuel Johnson Preface to Shakespeare

UNIT- III

3. T.S. Eliot Tradition and the Individual Talent

UNIT-IV:

4 Cleanth Brooks Irony as a Principle of Structure

PAPER 3.5: INTRODUCTION TO LINGUISTICS

UNIT-I

1. Definition and Characteristics of Language
2. Definition and Scope of Linguistics
3. Modern Linguistics Vs Traditional Approaches to Language Study

UNIT-II

4. Phonology: Phone, Phoneme, Allophone
5. Morphology: Morpheme; Morph, Morpheme, Allomorph; Simple, Complex, and Compound Words

UNIT-III

6. Phrase Structure Rules
7. Transformational Rules: Negative, Interrogative, Imperative, Passive (Simple Sentences only)

UNIT-IV

8. Semantics: Definition; Denotation and Connotation; Collocation; Idioms; Hyponymy; Synonymy; Antonymy; Relational Opposites; Polysemy and Homonymy; Components
9. Pragmatics: Definition; Context; Deixis; Speech Acts and Speech Act Theories (Austin and Searle); The Cooperative Principle and Grice's Conversational Maxims; Implicature

Reference

1. Jean Aitchison *General Linguistics*
2. Adrian Akmajian, et al *Linguistics: An Introduction to Language and Communication*
3. John Lyons *Language and Linguistics: An Introduction*
4. George Yule *The Study of Language*
5. S.K. Verma and N. Krishnaswamy *Modern Linguistics: An Introduction*
6. F.R. Palmer *Semantics*
7. Mark Lester *Introductory Transformational Grammar of English*

KVR GOVT COLLEGE FOR WOMEN , KURNOOL

(AUTONOMOUS)

MA in English - Restructured Course

(Effective from the 2015-2017 Batch)

SEMESTER-IV

PAPER 4.1: COMMONWEALTH LITERATURE-II

(Excluding Indian English Literature)

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. P.K. Page	Autumn
2. Derek Walcott	A Far Cry from Africa

UNIT-II

3. Margaret Atwood	The Edible Woman
4. Margaret Laurence	The Stone Angel

UNIT-III

5. Katherine Mansfield	Bliss and Other Stories (Penguin Modern Classics)

UNIT-IV

6. Bapsi Sidhwa	Ice Candy Man

PAPER 4.2: LITERARY CRITICISM AND THEORY-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Lionel Trilling	Freud and Literature

UNIT-II

2. Northrope Frye	Archetypes of Literature

UNIT - III

3. Derrida	Sign, Structure and Play

UNIT-IV

4. Bharata	Rasa (Natya Sastra)
5. Kuntaka	Vakrokti (Vakroktijivita)

PAPER 4.3: ENGLISH LANGUAGE TEACHING (ELT)

UNIT-I

1 The Grammar-Translation Method

2. The Direct Method

UNIT-II

3 The Oral Approach and Situational Language Teaching

4 The Audio -lingual Method

UNIT-III

5 The Bilingual Method

6 Communicative Language Teaching

UNIT-IV

7.The Lexical Approach

8 Task based Approaches

References:

1.Techniques and Principles in Language Teaching :Diane Larsen-Freeman

2. H.H. Stern

Fundamental Concepts of Language Teaching

3. Jack C. Richards and Theodore S. Rodgers

*Approaches and Methods
in Language Teaching*

4 Geetha Nagaraj

English Language Teaching

PROJECT

TEN SESSIONS ON DISSERTATION WRITING

1. Introduction
2. Aims of the Dissertation
3. The Research Proposal

Writing the Dissertation

4. Abstract
5. Literature Review
6. Research Methodology
7. Discussion
8. Conclusion
9. Citation and References
10. Bibliography

The Dissertation is on author(s)/topic(s) other than those prescribed for the MA programme.

M.Com Commerce

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS),
KURNOOL.

Accredited with “A” Grade by NAAC

SYLLABUS FOR FINAL YEAR M.COM PROFESSIONAL FOR THE
ACADEMIC YEAR 2016-17

SEMESTER - III

STRATEGIC MANAGEMENT

Internal Marks:25

No. of Hours per Week: 5

Exam Duration: 3Hrs External Marks:75

Unit: - I: - Introduction : Business policy and Strategic Management – Nature – Importance And Strategic Management Process- Defining the Company Mission.

Unit: - II: - Environmental Analysis: Environmental Scanning: - Economic, Social, Technological and Market Environment – SWOT Analysis – Environmental Forecasting.

Unit: - III: - Formulation of Strategies: Long term objective –Strategic Planning – Alternative. Strategies and Management choice – Combination of Strategies.

Unit: - IV:- Implementation of Strategies : Functional Strategies – Impact of Leadership on implementation – Resource, organisation and planning implementation – Role of Management in implementation.

Unit: - V:- Strategy Evaluation - Importance - Symptoms of malfunctioning of strategy - Organization anarchies - Operations Control and Strategic Control - Measurement of performance - Analyzing variances - Role of organizational systems in evaluation,.

Reference Books:

1. John Pearce & Robison Strategic Management
- 2 Francis Cherunilam : Strategic Management .Himalaya Publishing House.
3. Azhar Kazmi : Business Policy, TataMcGraw Hill.
4. P.K. Ghosh: Business Policy Strategic Management
5. L.M. Prasad : : Business Policy and Strategy
6. William F.Glueck, Lawrence R.janch : Business Policy and Strategic Management
7. Shiva Ramu: Strategic Alliances Response Books , A Division of sage Publications Pvt.Ltd.

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SYLLABUS FOR FINAL YEAR M.COM PROFESSIONAL FOR THE
ACADEMIC YEAR 2016-17

SEMESTER - III
CORPORATE TAX PLANNING AND MANAGEMENT

Internals Marks: 25 No of Hours per week: 5 Exam Duration: 3Hrs

External Marks: 75

UNIT-I: An Overview of Direct and Indirect taxes applicable to corporate sector –Significance of corporate taxation – Concepts and definitions of Corporate Income tax - Assessee –Previous year – Assessment year- Residence of company – Types of companies for tax purpose – Incomes forming part of total income of a company – Exempted incomes and Tax free incomes with special reference to corporate sector.

UNIT-II: Computation of Income from Business –Set off and carry forward of losses –Deductions from Gross Total Income applicable to companies.

UNIT-III: Computation of Total Income of company –Tax liability of company and Minimum Alternate Tax.

UNIT-IV: Tax planning –Definitions –Tax planning – Tax Avoidance and Tax evasion –

Tax Planning with reference to Financial Management Decisions – Capital structure

decision –Dividend –Bonus Shares.

UNIT-V: Filing of Returns – Appeals and Revisions – Penalties and prosecution

Reference Books:

1.Bhagawathi Prasad ; Law and Practice of Income Tax, Wiley Eastern, New Delhi.

2. Gaur and Narang : Income Tax, Law and Practice Kalyani Publishers, New Delhi.

3. Dinkar Pagare : Income Tax, Sultan Chand & Sons, New Delhi.

4. Vinod. K. Singhania : Direct Taxes, Planning and Management Taxman Publishers,

New Delhi

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SYLLABUS FOR FINAL YEAR M.COM PROFESSIONAL FOR THE
ACADEMIC YEAR 2016-17

SEMESTER - IV

INTERNATIONAL BUSINESS

Internal Marks: 25
3Hrs

No. of Hours per Week: 5

Exam Duration:

External Marks: 75

Objective: This course exposes the students to the environmental dynamics of international business and their impact on international business operations of firms

Unit I: INTRODUCTION TO INTERNATIONAL BUSINESS :

International business meaning nature- scope – importance-drivers of international business-approaches-economic environment-socio-cultural environment-technological environment-political environment- competitive advantages & problems of international business.

Unit II: GLOBALISATION & MULTINATIONAL CORPORTAION:

Globalization- meaning nature- scope importance drivers of international business-approaches-economic environment – technological environment-political environment-competitive advantages & problems of international business.

Unit III: INTERNATIONAL TRADE POLICIES & BLOCKS:

Introduction – tariffs-subsidies – import quotas constraints “Govt’s interveentions in formulating trade policies- economic integration Economic Community (ECE) North American Free Trade Agreement (NAFTA) the Association of South-East Asian Nations (ASEAN) South Asian Association for Regional Cooperation (SAARC)- Implications of trade blocks on business.

Unit-IV: INTERNATIONAL ECONOMIC INSTITUTION & AGREEMENTS :

Introduction – General Agreement on Tariffs and Trade (GATT) – World Trade Organization (WTO) – Structure – Functions- WTO agreements- International Monetary Fund (IMF)- World Bank .

Unit:-V: CONFLICT MANAGEMENT AND ETHICS IN INTERNATIONAL BUSINESS MANAGEMENT - Disadvantages of international business – Conflict in international business- Sources and types of conflict – Conflict resolutions – Negotiation – the role of international agencies –Ethical issues in international business – Ethical decision-making

Reference Books:

1. Subba Rao, P. International Business. Text & Cases Himalaya Publishing House, Mumbai.
 2. Justin Paul, International Business. Prentice- Hall of India Pvt, New Delhi.
 3. Francis Cherunilam. International Business Text & Cases. Third Edition, Prentice Hall of India Pvt, New Delhi.
 4. Ricky W Griffin & Michael W Putay. International business Addison Wesley Reading.
 5. Rathor & Jani International Marketing, Himalaya Publishing, Mumbai.
 6. John Fayer Weather, “International Business Management” , A conceptual Framework”, Mc Graw Hill, New York.
- Aswathappa. K., International Business Text and Cases Himalaya Publishing House, Mumbai

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS),
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SYLLABUS FOR FINAL YEAR M.COM PROFESSIONAL FOR THE
ACADEMIC YEAR 2016-17

SEMESTER – IV

E-COMMERCE

Internal Marks: 25 No. of Hours per Week: 5

Exam Duration: 3Hrs

External Marks: 75

Objective: This course exposes the students the practical application of E-Commerce and usage of E-Commerce

Unit I: INTRODUCCION-E- COMMERCE

Definition-Scope of E-Commerce (Ec)-Advantages and disadvantages of E- Commerce-Business to Business (B2B)- Business to Consumers (B2C) The Frame work of E.- Commerce-Electronic Markets Information Technology and Business.

Unit II :THE INTERNET

Evolution of the Internet —Internet for Business -Category of networks- World Wide Web (WWW)- Internet Service — Concerns about the internet-Building own website.

Unit III: ELECTRONIC MARKET

Procedures for Internet shopping-Web advertisement - ordering journals electronically — Selling on the web. E-Commerce for service industries Broker based services travel and Tourism services, Employment placement Element the job market —Trading stocks online.

Unit IV :ELECTRONIC PAYMENT SYSTEMS

Security schemes in Electronic payment systems-Electronic Credit card systems on the intern-Electronic fund Transfer and Debit cards on the Internet Stored —Value cards and E-cash

Unit V: E-SECURITY

Internet Protocols — Internet Security — Encryption digital signatures — Secure Electronic Transactions — Firewalls : Access Control.

Reference Books:

1. C,S,V.Murthy," Electronic Commerce, Himalaya Publishing House Mumbai
- 2 Efrain Turban, Jay lee. David king and H.Michel Chung. Electronic Commerce A Managerial perspective. Pearson Education Asia
3. Kamalesh K Baja and Debjani Nag E-Commerce. Tata Mc Graw-Hill Publish Company Limited. New Delhi.

2015-16

English

KVR GOVERNMENT LLEGE FOR WOMEN (A) KURNOOL

General English B.A./B.Com./B.Sc. for all courses

Semester I

Paper-I

Syllabus 2015-2016

Unit – I Prose

1. Secret of Work	Swami Vivekananda
2. The Power of Prayer	A.P.J.Abdul Kalam
3. Man in Black	Oliver Goldsmith

Unit – II Poetry

1. Daffodils	William Wordsworth
2. Stopping by Woods on a Snowy Evening	Robert Frost
3. Ecology	A.K.Ramanujan

Unit – III Short story

1. What is My Name?	P.Satyavathi
2. An Astrologers'S Day	R.K.Narayan
3. Luncheon	Somerset Maugham

Unit – IV One Act Play

The Merchant of Venice	William Shakespeare

Unit – V Language Activity (Exercises from Text)

1. Reported Speech
2. Unseen Comprehension Passage
3. Phonemic sounds and Symbols
4. Phonetic Transcription to Spelling
- 5 Syllable Devision
6. Word Stress

K.V.R. Govt. College (W), Kurnool

Modified Syllabus

General English B.A, B.Com, B.Sc for All Courses

Part I, Paper II

Syllabus Effective from 2015-16

UG Syllabus

Year-I Subject – English Year 2015-16

Semester – II

Unit – I: Prose

Total Marks –15

1. The Portrait of a lady -- Kushwanth Singh
2. Playing the English Gentleman -- M.K.Gandhi
3. On Shaking Hands -- A.G. Gardiner

Unit – II: Poetry

Total Marks –15

1. Bird Sanctuary -- Sarojini Naidu
2. Sonnet to Science -- Edger Allen Poe
3. La Belle Dane sans merci -- John Keats

Unit – III : Short Story

Total Marks –15

1. The Boy Who Broke the Bank -- Ruskin Bond
2. Thakur's Well -- Prem Chand
3. Money -- Ranganayakamma

Unit – IV: One Act Ply

Total Marks –10

1. The Death Trap -- Saki (H.H. Munro)

Unit – V: Language Activity

Total Marks –20

1. Simple , Complex & Compound	Marks – 05
2. Question Tags	Marks – 05
3. Common Errors	Marks – 05
4. Story Writing based on Hints	Marks – 05

For Semester I & II Prescribe Text book “Paths to Skills in English “Published by Orient Black Swam Pvt Ltd

Telugu

కె.వి.ఆర్. ప్రభుత్వ మహిళ డిగ్రీ కళాశాల - కర్నూలు

స్వయం ప్రతిపత్తి 2015-2016

బి.ఎ (ఆర్.డి) మొదటి సంవత్సరము -ప్రత్యేక తెలుగు

పాఠ్యప్రణాళిక

మొదటి సెమిస్టరు

1. శకుంతలోపాఖ్యానము నన్నయ - ఆంధ్రమహాభారతం - ఆదిపర్వము
చతుర్థాశ్వాసము - (65వ పద్యము నుండి 109వ పద్యము వరకు)
2. వసుచరిత్ర - రామరాజ భూషణుడు-వసుచరిత్ర-తృతీయాశ్వాసము
(26వ పద్యము నుండి 50వ పద్యము వరకు)
3. కన్యాశుల్కం - నాటకం - గురజాడ వేంకట అప్పారావు

రెండవ సెమిస్టరు

1. వేమన - పారిస్ ప్రతి
2. కోయిల - రాయప్రోలు సుబ్బారావు
3. గోసంగి - ఎండూరి సుధాకర్
4. గబ్బిలం - గుజ్జం జాషువ (మొదటి భాగం 1వ పద్యము నుండి 20 పద్యాల వరకు)
5. సీతాసందేశం - మొల్ల రామాయణం - సుందరకాండం
91వ పద్యము నుండి 124వ పద్యము వరకు

Hindi

**K.V.R. GOVT. DEGREE COLLEGE FOR WOMEN,
(AUTONOMOUS), KURNOOL.**

Department of Hindi

Part - I - B (Second Language) | B.A. / B.Sc/B.Com

Semester - I Syllabus

UNIT - I

1. गद्यभाग : 1. साहित्य की महत्ता
2. मित्रता
3. पृथ्वीराज की आँखे

UNIT - II

2. कहानी संग्रह : 1. मुक्ति - धन
2. उसने कहा था
3. ठेस

UNIT - III

3. व्याकरण : लिंग, विलोमशब्द, अनुवाद

UNIT - IV

4. Functional Hindi - Administrative Terminology (50 words)

UNIT - V

5. Letter writing : Personal letters, letters of orders, Job applications.

**K.V.R. GOVT. DEGREE COLLEGE FOR WOMEN,
(AUTONOMOUS), KURNOOL.**

Semister - II Syllabus - 2015 - 2016

UNIT - I

1. भारतीय संविधान में हिन्दी

UNIT - II

2. गद्य भाग : 1. भारत एक है
 2. पूस की रात
 3. एच.आई.वी.एड्स

UNIT - III

3. कहानी संग्रह : 1. जरिया
 2. भूख हडताल
 3. परमात्मा का कुत्ता

UNIT - IV

4. सूचना के अनुसार बदलिये : 1. वचन
 2. वाच्य
 3. पर्यायवाची शब्द
 4. जोड़िया

UNIT - V

5. संक्षिप्ती करण

Urdu

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for (B.A./ B.Com. / B.Sc.) U.G. 2015-2016

Under Common Core Scheme in Urdu – CBCS

As per Andhra Pradesh State Council of Higher Education

Second Language – Urdu Paper – I

SEMESTER – I

POETRY

Prescribed book: MUNTAKHAB ADAB – I

UNIT – I

1. GHAZAL

MEER – Ulti ho gayeen sab tadbeeren

2. NAZM

IQBAL – Naya Shivalah

UNIT – II

1. GHAZAL

GHALIB – Ye na thi hamari khismat

2. NAZM

Akbar Ilahabadi – Nasihat-e-Aqlaaqi

UNIT – III

1. GHAZAL

HALI – Uske jate hi ye kya ho gayee ghar ki surat

2. NAZM

FAIZ – Mujhse pehli si muhabbat meri mehboob

UNIT – IV

1. GHAZAL

YASEER KURNULI– Rafeeq-o-hamnafas

2. NAZM

AKHTARUL IMAAN – Khabr

UNIT – V

1. GHAZAL

RAHI FIDAYI– Apni tareeq ke raqim ke liye

2. NAZM

IQBAL QUSRO – Izn-e-Aam

KVR Govt. College (w) Autonomous Kurnool.
Syllabus for (B.A./ B.Com. / B.Sc.) U.G. 2015-2016
Under Common Core Scheme in Urdu – CBCS
As per Andhra Pradesh State Council of Higher Education
Second Language – Urdu Paper – II
SEMESTER - II

PROSE

UNIT – I	Mazmoon ‘Behas-o-Takrar’ - Sir Syed
UNIT – II	Afsana ‘Toba Tek Singh’ - Manto
UNIT – III	Drama ‘Gud ki Makhiyan’ - Kareem Rumi
UNIT – IV	Muraqqa ‘Ustad-e-Muhattarram Zore Sahib’ – Sulaiman Athar Jaweed
UNIT – V	Inshaiya ‘Padiye gar beemar’ – Mushtaq Ahmed Yusufi

History



K.V.R. Govt. College for Women (A), Kurnool.

B.A. History

SEMESTER - I

PAPER : I Year History Syllabus for first Semester

Unit - I	Influence of geography on History — survey of source — pre Historic period — Paleolithic, Mesolithic and Neolithic Cultures -- Role of Technology Indus Valley Civilization and its features Vedic culture - Early and later vedic periods -- Post vedic period — Emergence of and caste system rise of new religions movements — Jainism and Buddhism in 6th century B.C. Impact on society and culture
Unit - II	A brief survey of political in ancient India — Magadha — Ashoka's Dhanna, its nature and propagation — Mauryan Administration — Economy — Art and Architecture.
Unit - III	Freedom Struggle from 1885 - 1920 A.D Moderate Phase — Partition of Bengal — Emergence of Militant Nationalism — Swadeshi & Boycott Movement — Home Rule Movement
Unit - IV	Post — Mauryan period — The Kushans — The Guptas — Polity and administration, social conditions Art, Architecture Education, Literature, Philosophy science and Technology.
Unit - V	Post Gupta Period — Pushyabuties and Rajputs — Transition in Society — Position of women — south India — Sangam Age satavahas polity and administration, society, economy Art and Architecture.



**K.V.R. Govt. College for Women (A),
Kurnool.**

B.A. History

SEMESTER -II

PAPER : I Year History Syllabus for first Semester

Unit – I	The Pallavas — The Cholas — The Chalukyas — The Rastrakutas Polity and Administration — Society, Economy — Art and Architecture.
Unit – II	The Kakathiyas and the vijayanagara kingdoms polity and Administration, society economy — art and architecture
Unit – III	Invasions of Arahs, Ghaznavids and Ghor's and The Delhi sultanate — Society status of women economic and Technical developments, agriculture and Industry — Trade and commerce — urbanization art and architecture fine arts education and literature.
Unit – IV	Impact of Islam on India society and culture The Bhakti and The sufi movements — Emergence of composite culture.

B.A. History

Paper – III

History of Modern World (1453 – 1945 A.D)

Unit – I : Characteristics features of Renaissance – Significance of Reformation and Counter Reformation movements in Europe – Geographical Discoveries and Rise of Colonialism. Mercantilism and Commercial Revolution – Emergence of Modern World Economy.

Unit – II: Emergence of Nation States in Europe – Nature of Feudalism in Europe and Asia.

Unit – III: Age of Revolutions – Glorious Revolution (1688) – American Revolution (1776) – French Revolution (1789)

Unit – IV: Industrial Revolution and Rise of Capitalism – Impact on Asia and Africa – Meiji Restoration and Modernization of Japan – Unification Movements in Germany and Italy.

Unit – V: World between 1914 – 1945 Rivalry among colonial powers Imperialist Hegemony – Causes and consequences of First world War – World between the Wars – League of Nation, Fascism in Italy, Nazism in Germany, Militarism in Japan – Communist Movements in Russia and China.

Unit – VI: Causes and consequences of Second World War – UNO

B.A. History New Curriculum
Paper – IV (a)
History and Culture of Andhra Pradesh
(From Satavahanas to 1956 A.D)

- Unit – I:** Influence of Geographical features on History : Sources – A Brief Survey of political history from Satavahanas to Vijayanagara period – Socio-economic – Cultural conditions under Satavahana, Kakatiya and Vijayanagara rulers – growth and Spread of Jainism and Buddhism and their contribution to Art and Architecture.
- Unit – II:** The Qutb Sahis – a Brief Survey of Political History – Society, Economy and Culture. The Asaf Jahis – A Brief survey of their political history – Society, Economic and Culture – Salazar's reforms.
- Unit – III:** Andhra Under Colonial Rule: Coming of European Merchant Companies – Conquest of Andhra by the British – Early Uprisings – Administration – Land Revenue Settlements – Agrarian Conditions – Famines – Impact of Industrial Revolution of Andhra Economy – Sir Thomas Munroe – Impact of 1857 Revolt in Andhra.
- Unit – IV:** Social Reform and Literary Movements: Veeresalingam, Raghupathi Venkataratnam Naidu, Gurajada Appa Rao, Komarraju Venkatalakshmana Rao, Non-Brahmin, Adi Andhra, Dalit, Self-Respect Movements – New Literary Movements – Gurram Jashua, Boyi Bhimanna, Viswanatha Satyanarayana, Rayaprolu Subba Rao, Sri Sri.
- Unit – V:** Freedom Movement in Andhra : Vandemataram, Home Rule, Non-Cooperation, Alluri Sitarama Raju – Rampa Rebellion 1922-24 – Civil Disobedience and Quit India Movements. Political consequences in Telangana: Nizam Andhra Maha Sabha, Hyderabad State Congress, Razakars, Police Action and Accession of Telangana into Indian Union.
- Unit – VI:** Leftist Movements in Andhra and Telangana : Peasant armed Struggle – Tribal Uprisings – Komaram Bhimu – Bhoodan Movement. Movement for Separate Andhra State: Andhra Mahila Sabha – Sree Bagh Pact – Martyrdom of Potti Sreeramulu – Formation of Andhra State, 1953 – Vishalandhra Movement – State's Re-organization Commission – Gentlemen's Agreement – Formation of Andhra Pradesh in 1956.

Economics

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL.

B.A Economics

I Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2015-16

Semester-I

Paper-I(Core Paper)

Micro Economics-Consumer Behavior

Module-1

Nature, definition and scope of Economics-Wealth, Welfare, Scarcity and modern definitions.

Module-2

Methodology in Economics-Micro & Macro; Static and Dynamic analysis; Normative and positive science, Inductive and Deductive methods; partial and general Equilibrium.

Module-3:

Utility analysis:-Cardinal Approach-The Law of diminishing Marginal utility-The Law of Equi-Marginal Utility-Concept of Consumer's Surplus.

Module-4

Demand Analysis-Law of Demand-Elasticity of Demand-Measurement of Elasticity of Demand-Price, Income and Cross Elasticity's of Demand.

Module-5

Ordinal Approach: Indifference Curve Analysis-Properties of indifference curves-Price of budget line-Equilibrium of the Consumer with the help of indifference curves-Samuelson's revealed preference theory.

REFERENCES:

1. R.G. Lipsey and K.A. Chrystal-"Economics",Oxford University Press,10/e,2004.
2. P.A.Samuelson & W.D.Nordhaus-"Economics".Tata Mc.Graw Hill,18/e,2005.
3. N. Gregory Mankiw-"Principles of Economics",Thomson 2015.
4. H.L. Ahuja-" Advanced Economics Theory",S.Chand.
5. M.L. Seth-"Micro Economics",Lakshmi Narayana Agarwal,2015.
6. Bilas,A.-"Micro Economics Theory",International Student Edition,Mc.Graw Hill 1971.
7. Telugu Academy Publications.
8. D.M. Mithani & G.K. Murthy-Business Economics,Himalaya Publishing 2015.

KVR GOVT. COLLEGE FOR WOMEN (A),KURNOOL.

B.A Economics

I Year B.A. Programme (UG) Courses-Under CBCS

Academic Year 2015-16

Semester-II

Paper-II (Core Paper)

Micro Economics-Production and Price Theory

Module 1

Production function-Concept of homogeneous production function-Cobb-Douglas Production function-Law of variable proportions-Law of returns to scale-Different concept of Costs-Explicit and Implicit, Opportunity, Total-Fixed and Variable Costs, Marginal and Average Costs & it's Relationship. Concept of Revenue-Total, Marginal & Average Revenue and Break-Even Point.

Module-2

Analyse different types of Market Structures-Perfect Competition-Price determination and equilibrium of firm and industry under perfect Competition-Monopoly-Price determination-Price discrimination.

Module 3

Monopolistic Competition- Price determination- Oligopoly- Kinked demand curve approach.

Module-4

Marginal Productivity Theories of wage determination subsistence theory of wages, standard of living theory of wages, modern theory of wages and collective bargaining-Concept of Minimum wage.

Module-5

Theory of Rent: Ricardian Theory of rent-Quasi rent concept of Alfred Marshall.Theories of Interest-Classical, Neo-classical and Keynes Liquidity Preference theory-Profit-dynamic innovations, Risk and Uncertainty theories.

REFERENCES:

1. R.G. Lipsey and K.A. Chrystal-"Economics",Oxford University Press,10/e,2004.
2. P.A.Samuelson & W.D.Nordhaus-"Economics".Tata Mc.Graw Hill,18/e,2005.
3. N. Gregory Mankiw-"Principles of Economics",Thomson 2015.
4. H.L. Ahuja-" Advanced Economics Theory",S.Chand.
5. M.L. Seth-"Micro Economics",Lakshmi Narayana Agarwal,2015.
6. Bilas,A.-"Micro Economics Theory",International Student Edition,Mc.Graw Hill 1971.
7. Telugu Academy Publications.
8. D.M. Mithani & G.K. Murthy-Business Economics,Himalaya Publishing 2015.
9. Bilas,A.-"Micro Economic Theory",International student Edition,Mc.Graw Hill,1971

Political Science

K.V.R. Government College For Women (Autonomous), Kurnool
RE-ACCREDITED WITH 'A' GRADE BY NAAC
For the Year 2017-18 As per APSCE
Marks: 100 (Theory Exam: 60 Marks, Internal Assessment: 40 Marks)
I Year Students of B.A. Semester-I
Paper-I : Basic Concepts Of Political Science
(రాజనీతి శాస్త్రము - ప్రాథమిక భావనలు)

Unit-1	Explanatory Frameworks of Politics (రాజకీయాలు వివరణాత్మక భావనలు)
	1. What is Politics: Nature and Scope of Political Science (రాజనీతి అంటే ఏమిటి? : దాని స్వభావం, దాని పరిధి) 2. Approaches to the Study of Politics: Normative, Historical, Empirical Traditions (రాజకీయాల అధ్యయన దృక్పథములు: --తాత్విక చారిత్రక, ప్రయోగాత్మక సాంప్రదాయక)
Unit-2:	What is the State రాజ్యం అంటే ఏమిటి
	1. Origin and Evolution of the Modern State (ఆధునిక రాజ్యం పుట్టుక మరియు పరిణామం) 2. Different Conceptions on the role of the Modern State: Social Democratic and Neo Liberal conceptions (ఆధునిక రాజ్యం యొక్క పాత్ర--వివిధ భావనలు: సాంఘిక ప్రజాస్వామ్య భావన మరియు నయా ఉదారవాద భావనలు)
Unit-3:	Nations and Nationalism జాతులు మరియు జాతీయ వాదం
	1. Conceptual Distinction between Nationality and Nation (జాతీయత మరియు జాతి భావనల మధ్య వ్యత్యాసాలు) 2. Varieties of Nationalism: Culture and Civic Nationalism (జాతీయ వాదం రకాలు-- సాంస్కృతిక మరియు పౌర జాతీయ వాదం)
Unit-4:	Rights and Citizenship (హక్కులు మరియు పౌర సత్వం)
	1. Evolution of Rights: Civil and Social rights (హక్కుల పరిణామం పౌర మరియు సాంఘిక హక్కులు) 2. Citizenship: Universal and Differential Citizenship పౌర సత్వం--సార్వత్రిక- వ్యత్యాస పౌర సత్వం
Unit-5:	Freedom, Equality and Justice స్వేచ్ఛ, సమానత్వం, న్యాయం
	1. Freedom: Negative and Positive Freedom (స్వేచ్ఛ అనుకూల స్వేచ్ఛ ప్రతికూల స్వేచ్ఛ) 2. Equality: Formal Equality, Equality of Opportunity, Equality of Outcome (లాంచనప్రాయమైన సమానత్వం సమానత్వం అవకాశం లో సమానత్వం, ఫలిత సమానత్వం 3. Justice: Justice based on Needs, Deserts and Rights (న్యాయ భావన, సామాజిక న్యాయం , మెచ్చుకోదగిన లేదా శిక్షింపదగు చర్య మరియు హక్కులు)

Reference books:

1. Bhargava Rajeev and Acharya Ashok (eds) (2008) Political Theory: An Introduction, Pearson, New Delhi.
2. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, New York.
3. Bellamy R (1993) (Ed) Theories and Concepts of Politics, Manchester university press, New York.
4. Vincent A (2004) The Nature of Political Theory, Oxford Universit Press, New York.

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

I Year Students of B.A. H.E.P

Semester-II Paper-II

Marks: 100 (Theory Exam: 60 Marks, Internal Assessment: 40 Marks)

Political Science (రాజనీతి శాస్త్రము)

Paper-II (Core): Political Institutions (Concepts, Theories And Institutions)

పాఠపర్- 2 : రాజకీయ స్తంభాలు (భావాలు, సిద్ధాంతాలు స్తంభాలు)

Unit-1: Constitutionalism (రాజాయంగ బదధ ప్లాలన)

- 1.The Purpose of Constitutional law, Theory of Separation of Powers (రాజాయంగ బదధ ప్లాలన ఆవశయకత్ , అధికార విభజన సిద్ధాదంతం (లేదా) అధికార పుంధకకరణ సిద్ధాదంతం
2. Structural Forms of the Modern State: Basic features of Parliamentary and Presidential forms of Government (ఆధునిక రాజాయల లో పాభుత్వ నిరామణ పదదత్లు, ప్లాలలమ ంటరీ పాభుత్వం మరియు అధ్యక్ష త్రహ పాభుత్వం యొకక మాలిక లక్షణాలు)

Unit-2: Territorial Division of Authority of the Modern State (ఆధునిక రాజాయల లో అధికార ప్లాలదేశిక విభజన)

1. Basic features of Federal form of Government స్తమాఖ్య త్రహ పాభుత్వం యొకక మాలిక లక్షణాలు
2. Basic features of Unitary form of Government ఏక క ందా పాభుత్వం యొకక మాలిక లక్షణాలు

Unit-3: Institutional forms of the Modern State ఆధునిక రాజాయల లో స్తంసాధగత్ రూప్లాలు

1. Democracy: Basic features of Classical and Modern Representative Democracy పాజాసావామయము – సాంపాదాయ మరియు ఆధునిక ప్లాలాతినిదయ పాజాసావమయ మాలిక లక్షణాలు
2. Models of Democracy: Procedural Democracy and Substantive Democracy (పాజాసావమయ నిరిమత్లు – సామమాత్లా పాజాసావమయం -వాస్తవ పాజాసావమయం

Unit-4: Judiciary and Democratic State (సాాయయ వయవస్తధ మరియు పాజాసావమయ రాజయము)

- 1.The nature, role and functions of the Judiciary సాాయయ వయవస్తధ స్తవభావం దాని ప్లాలత్లా మరియు అధికారాలు , విదులు
2. Judicial Review: Debates on the Supremacy of legislature or Judiciary in the protection of Constitutional law సాాయయ స్తమీకాదికారం: రాజాయంగ బదధ ధ్టాల రక్షణలో శాస్తనశాఖ్ లేదా సాాయయశాఖ్ ఆధికయత్ -- చ్రద

Reference books:

1. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, New York

2. Held, David (2006) Models of Democracy 3rd edition Oxford Polity Press
3. Birch A.H (2000) The Concepts and Theories of Democracy, London Routledge
4. Bogdanor, V (Ed) (1988) Constitutions in Democratic Politics Gower, Aldershot
5. Scott Gordon (1999) Controlling the State: Constitutionalism from Ancient Athens to Today, Cambridge, Harvard University Press.

ENVIRONMENTAL STUDIES

Common for BA/BCom/BSc/BBA/BCA Programmes

Semester – I

(Total 30 Hours)

Unit-I : Natural Resources:

6 Hrs

Definition, scope and importance. Need for public awareness.

Brief description of;

1. Forest resources: Use and over-exploitation. Deforestation; timber extraction, mining, dams. Effect of deforestation environment and tribal people
2. Water resources: Use and over-utilization. Effects of over utilisation of surface and ground water. Floods, drought.
3. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.
4. Food resources: World food problems, Effects of modern agriculture; fertilizer- pesticide, salinity problems.
5. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources.
6. Land resources: Land as resources, land degradation, man induced landslides, soil erosion and desertification

Unit-II : Ecosystems, Biodiversity and its conservation

6 Hrs

1. Concept of an ecosystem
2. Structure and function of an ecosystem
3. Producers, consumers and decomposers
4. Food chains, food webs and ecological pyramids
5. Characteristic features of the following ecosystems:-
6. Forest ecosystem, Desert ecosystem, Aquatic ecosystem.
7. Value of biodiversity: Consumptive use, productive use. Biodiversity in India.
8. Threats to biodiversity: habitat loss, poaching of wildlife, man wildlife conflicts.
9. Endangered and endemic species of India
10. Conservation of biodiversity

Unit-III : Environmental Pollution

6 Hrs

1. Definition
2. Causes, effects and control measures of :-
 - a. Air pollution

- b. Water pollution
- c. Soil pollution
- d. Noise pollution
- 3. Solid waste management; Measures for safe urban and industrial waste disposal
- 4. Role of individual in prevention of pollution
- 5. Disaster management: Drought, floods and cyclones

Unit-IV : Social Issues and the Environment

6 Hrs

- 1. From Unsustainable to Sustainable development
- 2. Water conservation, rain water harvesting, watershed management.
- 3. Climate change, global warming, ozone layer depletion,
- 4. Environment protection Act
- 5. Wildlife Protection Act, Forest Conservation Act

Unit-V : Human Population and the Environment

6 Hrs

- 1. Population explosion, impact on environment.
- 2. Family welfare Programme
- 3. Environment and human health
- 4. Women and Child Welfare
- 5. Value Education
- 6. Role of Information Technology in Environment and humanhealth.

Reference Books :

- 1. Environmental Studies by Dr.M.Satyanarayana, Dr.M.V.R.K.Narasimhacharyulu, Dr.G. Rambabu and Dr.V.VivekaVardhani, Published by Telugu Academy, Hyderabad.
- 2. Environmental Studies by R.C.Sharma, Gurbir Sangha, published by Kalyani Publishers.
- 3. Environmental Studies by Purnima Smarath, published by Kalyani Publishers.

I. HUMAN VALUES AND PROFESSIONAL ETHICS
Common for BA/BCom/BSc/BBA/BCA Programmes

I Semester (Total 30 Hrs)

Unit-I : Introduction to Value Education

1. Value Education, Definition, Concept and Need for Value Education
2. The Content and Process of Value Education
3. Self-Exploration as a means of Value Education
4. Happiness and Prosperity as parts of Value Education

Unit-II : Harmony in the Human Being

1. Human Being is more than just the Body
2. Harmony of the Self ('I') with the Body
3. Understanding Myself as Co-existence of the Self and the Body
4. Understanding Needs of the Self and the Needs of the Body

Unit-III : Harmony in the Family and Society and Harmony in the Nature

1. Family as a basic unit of Human Interaction and Values in Relationships
2. The Basics for respect and today's Crisis : Affection, Care, Guidance, Reverence, Glory, Gratitude and Love
3. Comprehensive Human Goal : The Five dimensions of Human Endeavour

Unit-IV : Social Ethics

1. The Basics for Ethical Human conduct
2. Defects in Ethical Human Conduct
3. Holistic Alternative and Universal order
4. Universal Human Order and Ethical Conduct

Unit-V : Professional Ethics

1. Value Based Life and Profession
2. Professional Ethics and Right Understanding
3. Competence in Professional Ethics

4. Issues in Professional Ethics – The Current scenario
5. Vision for Holistic Technologies, Production System and Management Models

Reference Books :

1. A.N.Tripathy, Human Values, New Age International Publishers, 2003
2. Bajpai.B.L., Indian Ethos and Modern Management, New Royal Book Co., Lucknow, Reprinted, 2004
3. Bertrand Russell, Human Society in Ethics and Politics
4. Corliss Lamont, Philosophy of Humanism
5. Gaur.R.R., Sangal.R, Bagaria.G.P., A Foundation Course in Value Education, Excel Books, 2009
6. Gaur.R.R., Sangal.R, Bagaria.G.P., Teacher's Manual, Excel Books, 2009
7. I.C.Sharma, Ethical Philosophy of India, Nagin & Co., Julundhar
8. Mortimer.J.Adler, What Man has Made of Man
9. R.Subramanian, Professional Ethics, Oxford University Press
10. Text Book for Intermediate Ethics and Human Values, Board of Intermediate Education & Telugu Academy, Hyderabad
11. William Lilly, Introduction to Ethics, Allied Publishers

INFORMATION & COMMUNICATION TECHNOLOGY –1 (ICT-1)

Computer Fundamentals and Office Tools

Common for all Degree Programmes

II Semester

(30 Hours of Teaching Learning including Lab)

Unit-I:

Basics of Computers :Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working – Central Processing Unit – I/O Devices.

Unit-II:

Primary, Auxiliary and Cache Memory – Memory Devices. Software, Hardware, Firmware and People ware – Definition and Types of Operating System – Functions of an Operating System – MS-DOS – MS Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Pane.

Unit-III:

MS-Word

Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus – Mail Merge

Unit-IV:

MS-PowerPoint

Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation

Unit-V:

MS-Excel

Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns –Changing column widths and row heights, auto format, changing font sizes, colors, shading.

Reference Books:

1. Fundamentals of Computers by ReemaThareja, Publishers : Oxford University Press, India
2. Fundamentals of Computers by V.Raja Raman, Publishers : PHI
3. Microsoft Office 2010 Bible by John Walkenbach, Herb Tyson, Michael R.Groh and FaitheWempen, Publishers : Wiley

COMMUNICATION SKILLS AND SOFT SKILLS-1 (CSS -1)**COURSE CONTENT(30 hours)**

Vocabulary is considered the key to communication and it plays a great role for learners in acquiring a language. The first unit, therefore, is on the different aspects of vocabulary. Since English is a predicate-oriented language, there are two units on grammar focusing on the verb phrase. Listening and speaking are the two receptive skills. Listening is the basic skill of communication, and reading helps a person refine their writing skills. Unit IV and Unit V are on listening and reading respectively.

Unit I: Vocabulary Building

- 1a. Prefixes and Suffixes
- 1b. Conversion
- 1c. Compounding
- 1d. Analogy
2. One-Word Substitutes
3. Words Often Confused
4. Synonyms and Antonyms
5. Phrasal Verbs

Unit II: Grammar - 1

1. Types of Verbs
2. Subject-Verb Agreement

Unit III: Grammar - 2

1. Meanings of Modals
2. Tense (Present and Past) and Aspect
3. The Several Possibilities for Denoting Future Time
4. Articles and Prepositions

Unit IV: Listening Skills

1. The Importance of Listening
2. Types of Listening
3. Barriers/Obstacles to Effective Listening
4. Strategies for Effective Listening

Unit V: Reading Skills

1. Skimming
2. Scanning
3. Intensive Reading and Extensive Reading
4. Comprehension

Advance Urdu

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for B.A. Urdu CBCS 2015-16

As per Andhra Pradesh State Council of Higher Education

First year Optional Urdu Paper - 1

SEMESTER - I

URDU PROSE

Afsanavi Adab aur Drama

UNIT – I Novel - Taaruf aur Irteqa

UNIT – II Novel ‘Nirmala’ by Premchand

UNIT – III Afsana - Taaruf aur Irteqa

UNIT – IV Urdu Afsane edited by Raziya Sajjad Zaheer.

The following short stories only:

1. ‘Woh’ by Balraj Menra
2. ‘Computer Isq’ by Joginder Pal
3. ‘Lal aur Peela’ by K.A.Abbas
4. ‘Mom ki Mariyam’ by Jeelani Banu

5. ‘Allah de Banda le’ by Raziya Sajjad Zaheer

UNIT – V Drama ‘Darwaze Khol Do’ by Krishan Chander

KVR Govt. College (w) Autonomous Kurnool.

Syllabus for B.A. Urdu CBCS 2015-16

As per Andhra Pradesh State Council of Higher Education

First year Optional Urdu Paper - II

SEMESTER - II

URDU PROSE

Ghair Afsanavi Adab

**UNIT – I SAFARNAMA - ‘Bullet Train mein kabhi na baitho’
by Mujtaba Hussain**

UNIT – II KHAKA - Taaruf aur Irteqa

**UNIT – III Khaka - ‘ Dr.Abdul Haq marhoom’ by Rasheed Ahmed
Siddiqui.**

UNIT – IV INSHAIYA - Taaruf aur Irteqa

**UNIT – V Inshaiya – ‘Jheengar ka Janaza’ by
Khwaja Hasan Nizami**

Commerce

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL.

Accredited with "A" Grade by NAAC

SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017

First Semester B Com General / B Com Computer Applications

SEMESTER – I

FINANCIAL ACCOUNTING-I

.....
Objectives:

- 1.To make the students acquire the conceptual knowledge of accounting
- 2.To equip the students with the knowledge of accounting process and preparation of final accounts
- 3.To develop the skills of recording financial transactions and preparation of reports using computers

UNIT1: Introduction to Accounting:

Need for Accounting – Definition, features, objectives, functions, systems and bases and scope of accounting - Book keeping and Accounting - Branches of Accounting - Advantages and limitations-basic terminology used- – Accounting concepts and conventions. Accounting Process-Accounting cycle-Accounting equation-Classification of accounts-rules of double entry book keeping – Identification of financial transactions- Journalizing –Posting to Ledgers, Balancing of Ledger Accounts --

UNIT 2: Subsidiary Books

Sub Division of Journal-Preparation of Subsidiary Books including different types of cashbooks-Simple cashbook, cashbook with cash and discount columns, cashbook with cash, discount and bank columns, cashbook with cash and bank columns and petty cash book. Preparation of sales register, purchase register, journal proper, debit note register, credit note register, and different cash books including interest and discount transactions using computers.

UNIT 3:Trial Balance

Trial Balance: Meaning, Objectives, Methods of preparation

UNIT:4. Final Accounts;.

- Final Accounts: Meaning, features, uses and preparation of Manufacturing, Trading Account, Profit & Loss Account and Balance Sheet-Adjusting and Closing entries. Preparation of trial balance, trading, profit and loss account, processing of year ending and closing the books, adjusting and closing entries and balance sheet using computers.

UNIT 5: Accounting Standards

Accounting standards formulated by the Institute of Chartered Accounts of India

Suggested Books

- 1.Accountancy - IS.P. Jain & K.L Narang , Kalyani Publishers
2. Accountancy – ITulasian, ata Mcgraw Hill Co
- 3.Financial Accounting – Dr.V.K.Goyal , Excel Books
4. Introduction to Accountancy T.S.Grewal S.Chand and CO

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SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017

First Semester BCom General / BCom Computer Applications

SEMESTER – I

Business Organization

.....
Unit-I – Introduction

Concepts of Business, Trade, Industry and Commerce – Features of Business -Trade Classification - Aids to Trade – Industry – Classification – Relationship of Trade, Industry and Commerce.

Unit II- Business Functions and Entrepreneurship

Functions of Business - Factors influencing the choice of suitable form of organization – Meaning of Entrepreneurship – Types – Functions of Entrepreneurship.

Unit –III – Forms of Organization

Sole Proprietorship – Meaning – Characteristics – Advantages and Disadvantages – Partnership - Meaning – Characteristics- Kinds of partners – Advantages and Disadvantages – Partnership Deed – Hindu-undivided Family

Unit-IV- Company

Company – Meaning – Characteristics –Advantages – Kinds of Companies - Differences between Private Ltd and Public Ltd Companies.

Unit-V- Company Incorporation

Preparation of important Documents for incorporation of Company – Memorandum of Association – Articles of Association – Differences Between Memorandum of Association and Articles of Association - Contents of Prospectus – Statement in Lieu of Prospectus

Reference Books

1. C.D.Balaji and G. Prasad, Business Organization - Margham Publications, Chennai.

2. R.K.Sharma and Shashi K Gupta, Business Organization - Kalyani Publications.
3. C.B.Guptha, Industrial Organization and Management, Sultan Chand.
4. Y.K.Bushan, Business organization and Management, Sultan Chand.
5. Sherlekar, Business Organization and Management, Himalaya Publications.

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SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017

First Semester BCom Computer Applications

SEMESTER – I

Computer Fundamentals & Photoshop

.....

Unit-I: Introduction to Computers: Characteristics and limitations of Computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system- Windows basics: desktop, start menu, icons – Recent Developments – Cloud Server.

Unit-II: Input and Output Devices: Keyboard and mouse, inputting data in other ways, Types of Software: system software, Application software, commercial, open source, domain and free ware software, Memories: primary, secondary and cache memory.

Unit –III: Introduction to Adobe Photoshop: Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, pallets, tool box, screen modes, saving files, reverting files, closing files.

Unit –IV: Images: working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- **Working with Tool box:** Practice Sessions.

Unit-V: Layers: Working with layers- layer styles- opacity-adjustment layers. **Filters:** The filter menu, Working with filters- Editing your photo shoot, presentation –how to create ads, artistic filter, blur filter, brush store filter, distort filters, noise filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

Reference Books:

1. ReemaThareja, Fundamentals of Computers, Oxford University Press
2. Adobe Creative Team, Adobe Photoshop Class Room in a Book.
3. David Maxwell, Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016.

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SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017**Second Semester BCom Computer Applications****SEMESTER – II****FINANCIAL ACCOUNTING-II**
.....**Objectives:**

- 1.To make the students acquire the conceptual knowledge of accounting
- 2.To equip the students with the knowledge of accounting process and preparation of final accounts
- 3.To develop the skills of recording financial transactions and preparation of reports using computers

UNIT - 1: Bank Reconciliation Statement

Bank Reconciliation Statement- Need - Reasons for difference between cash book and pass book balances – Problems on favorable and over draft balances - Ascertainment of correct cash book balance. Preparation of bank reconciliation statement using computers

UNIT – 1I: Errors and Rectification

Errors and their Rectification - Types of Errors - Rectification before and after preparations of final Accounts - Suspense Account- Effect of Errors on Profit. Rectification of errors using computers.

UNIT – 1II: Consignment

Consignment - Features, Terms used Pro-forma invoice - Account sale Delcredere commission - Accounting treatment in the books of the consignor and the consignee - Valuation of consignment stock - Normal and abnormal Loss - Invoice of goods at a price higher than the cost price.

UNIT – IV : : Depreciation - Provisions and Reserves:

Meaning of Depreciation - Causes- objects of providing for depreciation -Factors affecting depreciation - Accounting Treatment- Methods of providing depreciation - Straight line method - Diminishing Balance Method. ,Provisions and Reserves - Reserve Fund – Different Types of Provisions and Reserves.

UNIT - V: Computerized Accounting

Computerized Accounting: Meaning and Features-Advantages and disadvantages of computerized Accounting Creating of an Organization - Grouping of accounts – Creation of Accounts – creation of inventory-Creation of stock groups-Stock categories, units of measurement-Stock items-Entering of financial transactions-Ttypes of vouchers-Voucher entry-Editing and deleting of vouchers-Voucher numbering-Customization of vouchers

Suggested Readings:

- 1.Principles and Practice of Accounting R.L. Gupta & V.K. Gupta Sulthan Chand &sons
- 2.Accountancy - IS.P. Jain & K.L Narang Kalyani Publishers
- 3.Accountancy – ITulasian Tata Mcgraw Hill Co
- 4.Financial Accounting – V.K.Goyal - Excel Books

KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL.

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SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017

Second Semester BCom Computer Applications

SEMESTER – II

Principles of Management

.....

Unit – I: Introduction to Management

Management – meaning – significance – management vs administration – functions of management – Leadership – Leader Vs manager – Fayol's principles of management.

Unit – II: Planning

Planning – meaning – significance – Steps in planning – Decision making – steps in decision making process.

Unit – III - Organization

Organizing – meaning – principles of organizations – line and staff organization – organization chart.

Unit – IV : Delegation of Authority

Delegation – meaning – Elements – Principles – Difficulties in delegation – Guidelines for making delegation effective – Centralization Vs Decentralization.

Unit – V –Staffing and controlling

Staffing – Selection procedure – coordination – control – meaning –Process of control – Qualities of Good Control

Reference Books

1. Dr.C.D.Balaji and G.Prasad, Business organization and Management – Margham publications, Chennai -17.

2. R.K.Sharma and Shashi, K.Gupata Business organization and management – Kalyani publications.
3. C.B.Guptha, industrial organization and management, Sulthanchand.
4. Y.K.Bushan, business organization and management, Sulthanchand.
5. Sherlekar, business organization and management, Himalaya Publications.
6. Management, Maruthi publishers.

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SYLLABUS FOR FIRST YEAR B.COM (CA) FOR 2016-2017

Second Semester BCom Computer Applications

SEMESTER – II

Programming in C

.....

Unit- I: Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting

Unit-II: Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Go to Statement

Unit- III: Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function

Unit- IV: Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays, **Strings:** Introduction String and Character functions

Unit-V: Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions - Unions – Enumerated Data Types.

Reference Books:

1. ReemaThareja, Introduction to C programming, Oxford University Press.
2. E Balagurusamy, Computing Fundamentals & C Programming – Tata McGraw-Hill, 2008.
3. Ashok N Kamthane, Programming with ANSI and Turbo C, Pearson Publisher, 2002.
4. Henry Mulish & Hubert L.CooReemaThareja: The Spirit of C: An Introduction to Modern Programming, Jaico Publishing House, 1996.

Computer Applications

ANNEXURE - III

K.V.R. Govt. College for Women (A), Kurnool.

BA / B.Com. (Computer Applications) Three-Year Degree Course (Semester Wise)

Syllabus for First Year –1st Semester.

Paper I : FUNDAMENTALS OF COMPUERS

(Regulations 2015-2016)

No. of Hours Per Week : 03

Max. Marks: 75.

Unit- I:

Introduction to Computers : Definition – Computer system characteristics - logical organization of digital computers -types of computers (Analog Vs Digital Computers) – computer generations – computer hardware – software –System Software and Application Software-The shapes of computers today (Super Computers, Mainframe Computers, Mini Computers, Micro Computers)

Unit- II:

Peripheral Devices : Keyboard, mouse and other input devices, Monitors, Printers and other output devices. **Storage information:** Primary memory (Semi conductor memory) - **Secondary memory** (diskettes, Hard disks, tapes, CD & DVD, Pen drive).

Unit- III: Operating systems: Meaning, Definition, Functions of Operating System, Types of Operating Systems – Booting process.

Introduction to DOS: DOS internal commands, DOS External Commands

Unit-IV - Networking Concepts - Types of Networks: LAN , MAN , WAN – Network Topologies for LAN (Ring, Bus, Star, Mesh) - Video conferencing.

Unit – V: Introduction to Windows: Desktop, File, Folder, My Computer, My documents, Recycle bin, Internet Explorer, Windows Explorer, Office Automation: Organization of an Office, Nature of Office work , The definition and need for office automation.

Unit – VI: MS word: Meaning and features of word processing – Parts of MS-Word window – Toolbars – Creating, Saving and Closing a document – Opening and editing a document – Moving and copying Text – Text and paragraph formatting, applying Bullets and Numbering – Find and Replace – Headers & Footers– Spelling and Grammar checking-Mail Merge - Working with tables – Macros – Creating, Deleting and Running a Macro .

Prescribed Books :

1. Suresh K. Basandra : Computers Today, Galgotia
2. Peter Norton's Introduction to Computers TMH (4th edn.) 2001
3. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill (2008) Reference Books :
4. Fundamentals of Computers – P. Mohan, Himalaya Publishing House.

ANNEXURE - IV

K.V.R. Govt. College for Women (A), Kurnool.

BA / B.Com. (Computer Applications) Three-Year Degree Course (Semester Wise)

Syllabus for First Year –2nd Semester.

**Paper II : OFFICE AUTOMATION TOOL
(Regulations 2015-2016)**

No. of Hours Per Week : 03

Max. Marks: 75.

Unit–I - MS Excel : Features of MS Excel – Parts of MS Excel Window – Saving, Opening and Closing workbook – Insertion and deletion of worksheet – Cell range – Formatting – Auto fill – Formulas

Unit–II - References : Relative, absolute and mixed – Functions : Mathematical , Statistical, Date and String functions – Charts and its types – Data Sorting, Filtering, Validation, Consolidation, Pivot table.

Unit–III - MS – Access : MS Access – Data, Information, Database, File, Record, Fields – Features of MS Access – Creating Tables - Creating Forms - Creating Queries and Generating Reports – Relationships.

Unit–IV- MS PowerPoint: Features of MS PowerPoint – Parts of MS PowerPoint window - Creating presentations through Auto Content Wizard, Templates and Blank – Inserting and deleting slides – Slide views – Custom Animation and Transition effects.

Unit–V – Internet :Overview of Internet, Internet service providers (ISP) – Modems-Browsers, search engine, searching web using search engines – Email – Advantages & Disadvantages – Creation of email id – User ID , Password – Computer Virus

Unit-VI-E- Commerce : Meaning, advantages and limitations of E-commerce – Trading stocks online, ordering products / journals / books etc., online, travel and tourism services, employment placement and job market, internet banking, auctions, online publishing, advertising – Online payment system.

Prescribed Books :

1. Suresh K. Basandra : Computers Today, Galgotia
2. Peter Norton's Introduction to Computers TMH (4th edn.) 2001
3. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill (2008)
4. E Commerce – David Whitely, Tata Mc Graw Hill.

Reference Books :

1. Fundamentals of Computers – P. Mohan, Himalaya Publishing House.
2. E Commerce – CSV Murthy, Himalaya Publishing House.
3. E Commerce, E Business – C.S. Rayudu, Himalaya Publishing House.

ANNEXURE - XV**KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL**

For all I B.A./B.Sc./B.Com. programs with no computer course as core subject

(Revised syllabus W.E.F.2015- 2016)

PAPER –I: INTRODUCTION TO COMPUTERS.**SEMESTER – I SYLLABUS****Unit-1 : Exploring Computers**

Exploring Computers and their uses: Overview: Computers in our world, The computer defined, Computers for individual users, Computers for organizations, Computers in society, Why are computers so important. Looking inside the computer system:

Unit-2 : Peripheral devices and hardware

Overview: Detecting the ultimate machine, The parts of a computer system, The information processing cycle, Essential computer hardware: processing devices, memory devices, Input and output devices, Storage devices, System software, Application software, Computer data, Computer users. Using the keyboard and mouse:

Overview: The keyboard and mouse, The keyboard, How the computer accepts input from the keyboard, The mouse, Variants of the mouse, Ergonomics and input devices.

Inputting data in other ways: Overview: Options for every need and preference, Devices for hand, optical input devices, Audio visual input devices.

Printing : Overview: putting digital content in your hands, Commonly used printers, High-quality printers, Thermal-wax printers, Dye-sublimation printers, Plotters.

Unit-3 : Storage Devices and Operating System Basics

Transforming data into information: Overview: The difference between data and information, How computers represent data, How computers process data, Machine cycles, Memory, Factors effecting processing speed, The computer's internal clock, The Bus, Cache memory. Types of storage devices: Overview: An ever-growing need, Categorizing storage devices, Magnetic storage devices—How data is stored on a disk, How data is organized on a magnetic disk, How the operating system finds data on a disk, Diskettes, hard disks, Removable high-capacity magnetic disks, Tape drivers, Optical storage devices, Solid-state storage devices, Smart cards, Solid-state disks.

Unit-4 : Operating system basics

Overview: The purpose of operating systems, Types of operating systems, Providing a user interface, Running programs, Managing hardware, Enhancing an OS utility software.
Networking Basics: Overview: Sharing data anywhere, anytime, The uses of a network, Common types of networks, Hybrid networks, How networks are structured, Network topologies and protocols, Network media, Network hardware.

Prescribed Books :

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007)
(Chapters 1, 2, 3, 4, 5, 6,7,10,11,12)
2. Ran Mansfield, working in Microsoft Office, Tata McGraw Hill 2008).
(Chapters : 4 to 9, 11, 12, 24, 25, 28)

Reference Books :

1. Michael Miller, Absolute Beginner's guide to computer Basics, Fourth Edition, Pearson Education (2007).
2. Deborah Morley, Charles S.Parker, understanding computers today and tomorrow, 11th edition, Thomson(2007).
3. Ed Bott, woody Leonhard, using Microsoft Office 2007, Pearson Education (2007).

ANNEXURE - XVI

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL

For all I B.A./B.Sc./B.Com. programs with no computer course as core subject

(Revised syllabus W.E.F.2015- 2016)

PAPER –I: INTRODUCTION TO COMPUTERS.

SEMESTER – II SYLLABUS

Unit-1 : MS-Word

Word Basics : Starting word, Creating a new document, Opening preexisting document, The parts of a word window, Typing text, Selecting text, Deleting text, Undo, Redo, Repeat, Inserting text, Replacing text, Formatting text, Cut , Copy, Paste – Formatting Text and Documents : Auto format, Line spacing, Margins, Borders and Shading. Headers and Footers : Definition of headers and footers, creating basic headers and footers, creating different headers and footers for odd and even pages.

Unit-2 : Tables

Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, Deleting columns, changing column width. Graphics : Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing.

Unit-3: Templates

Template types, using templates, exploring templates, modifying templates.

Macros : Macro, Record in macros, editing macros, running a macro.

Mail Merge : Mail Merge concept, Main document, data sources, merging data source and main document, Overview of word menu options word basic tool bar.

Unit-4: Ms-Power Point

Power Point : Basics, Terminology, Getting started, Views

Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside

world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements.

Prescribed Books :

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007) (Chapters 1,2,3,4,5,6,7,10,11,12)
2. Ran Mansfield, working in Microsoft Office, Tata McGraw Hill (2008). (Chapters : 4 to 9, 11, 12, 24, 25, 28)

Reference Books :

1. Michael Miller, Absolute Beginner's guide to computer Basics, Fourth Edition, Pearson Education (2007).
2. Deborah Morley, Charles S.Parker, understanding computers today and tomorrow, 11th edition, Thomson (2007).
3. Ed Bott, Woody Leonhard, using Microsoft Office 2007, Pearson Education (2007).

ANNEXURE – VI

LIST OF PRACTICALS

KVR GOVT. COLLEGE (AUTONOMOUS): : KURNOOL
I B.A. CA/CE & I B.Com.C.A. NEW SYLLABUS
(Revised syllabus W.E.F.2015- 2016)

FUNDAMENTALS OF COMPUTERS & OFFICE AUTOMATION TOOLS

PRACTICAL PAPER: Office Automation Tools

MS-WORD

1. Design a visiting card for Managing Director of a Company with following specification
 - i. Size of visiting card is 3.5" x 2".
 - ii. Name of a company with big font using Water Mark.
 - iii. Phone number, fax number and e-mail address with appropriate symbols.
 - iv. Office and residence address separated by line.
2. Create a letter head of a company
 - i. Name of Company on the top of the page with big font and good style.
 - ii. Phone numbers, fax numbers, e-mail address with appropriate symbols.
 - iii. Main products manufactured to be described at the bottom.
 - iv. Slogans if any should be specified in bold at the bottom.
3. Creation of your Bio-Data: consisting Name, email-id, Contact Address, Career Objective, Educational qualifications, social activities, achievements.

MS-POWERPOINT

1. Make a Power point presentation on your strengths, weaknesses, hobbies, factors that waste your time.
2. Make a Power point presentation on any Current affair (Not less than 8 slides)
3. Make a Power point presentation to represent your College profile.
4. Make a Power point presentation of all the details of the books that you had studied in

MS-ACCESS

1. Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE:

REGISTER NUMBER, NAME, DOB, GENDER, CLASS.

TABLE2 STRUCTURE:

REGISTER NUMBER, M1, M2 ,M3, M4, M5, TOTAL.

Maintain the relationship between two tables with REGISTER NUMBER as a Primary Key and answer the following queries:

Show the list of students with the following fields as one query

REGISTER NUMBER, NAME, GENDER, TOTALMARKS.

2. Maintain the relationship between above two tables with REGISTER NUMBER as a Primary Key and answer the following reports:

Reports must have following columns

Report1 with REGISTER NUMBER, NAME, MARKS OF ALL SUBJECTS and TOTAL

Report2 with REGISTER NUMBER, TOTAL, PERCENTAGE.

3. Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE:

EMP-CODE, EMP-NAME, AGE, GENDER, DOB.

TABLE2 STRUCTURE:

EMP-CODE, BASIC-PAY.

Maintain the relationship between two tables with EMP-CODE as a Primary Key generate the following reports:

REPORT1:

EMP-CODE, EMP-NAME, BASIC-PAY, DA, HRA, GROSS-SALARY.

REPORT2:

EMP-CODE, EMP-NAME, AGE, GENDER, GROSS-SALARY.

MS-EXCEL

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice versa.

Decimal Numbers: 35, 68, 95,165,225, 355,375,465

Binary Numbers: 101,1101,111011,10001,110011001,111011111.

2. The ABC Company shows the sales of different products for 5 years. Create column chart, 3D-column and Bar chart for the following data.

YEAR PRODUCT-1 PRODUCT-2 PRODUCT-3 PRODUCT-4

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
2010	1000	800	900	1000

2011	800	80	500	900
2012	1200	190	400	800
2013	400	200	300	1000
2014	1800	400	400	1200

3. Create a suitable examination data base and find the sum of the marks (total) of each student and respective class secured by the student rules:

Pass if marks in each subject ≥ 35 .

Distinction if average ≥ 75 .

First class if average ≥ 60 but < 75 .

Second class if average ≥ 50 but < 60 .

Third class if average ≥ 35 but < 50 .

Fail if marks in any subject is < 35 .

Display average marks of the class, subject wise and pass percentage.

Excel:

1. Create a worksheet in excel by accepting serial number, student name, marks in 3 subjects, calculate total average and find out the maximum and minimum marks.
2. Create a work sheet in excel to show an employe and salaries as per following conditions:
 - a. D.A is 10% of daily pay.
 - b. H.R.A is 15% of basic salary
 - c. Income tax is 6% of basic salary and calculate gross salary.
3. Create a transport reservation with the following description conditions:
 - a. Passenger name not exceed 20 characters with the display message "Please" and enter your name.
 - b. Gender column male or female option in the interaction display request "Select gender please".
 - c. Set No. ≥ 1 and ≤ 100 with display of message out of range use interactive display request "Enter set number".
 - d. Class I or II, III to select as T. The amount is 500/- If the class is I is 400/- III is 300/-
4. Create a chart using cricket source and cricketers name and the number of runs using column chart and pie chart.

Communicative English

KVR GOVERNMENT COLLEGE FOR WOMEN, KURNOOL
(AUTONOMOUS)

I YEAR DEGREE B.A COMMUNICATIVE ENGLISH

SYLLABUS (w.e.f. 2015-2016)

SEMESTER- I

PAPER-1

OBJECTIVES: To Introduce the students to the elements of grammar and usage for effective communication

UNIT-I: VOCABULARY AND USAGE

(1) Synonyms and Antonyms	(2) Phrasal Verbs
(3) One-word Substitutes	

UNIT-II: GRAMMAR

- (1) Verb: Tense and Aspect
- (2) Agreement between subject and verb (concord)
- (3) Question tags

UNIT-III: READING COMPREHENSION

- (1) Identifying the main theme /central idea/topic of a given passage.
- (2) Locating specific theme and identifying general ideas in a given passage.
- (3) Testing the Knowledge of Vocabulary and Grammar of the Candidate.

UNIT-IV: STORY WRITING

UNIT-V: NOTE- MAKING

RECOMMENDED READING:

- (1)Thomson and Martinet: A Practical English Grammar
- (2)Bhaskaran and David Horsburgh: Strengthen Your English, OUP 1973
- (3)Sarah Freeman: Written Communication in English, Oriented Longman, 1977

KVR GOVERNMENT COLLEGE FOR WOMEN, KURNOOL(AUTONOMOUS)

I YEAR DEGREE B.A. COMMUNICATIVE ENGLISH

SYLLABUS (w.e.f. 2015-2016)

SEMESTER- II : PAPER-II

OBJECTIVES: To introduce the students to the elements of grammar and usage for effective communication

UNIT-I: VOCABULARY AND USAGE

- (1) Words often confused (2) Idioms (3) Spelling

UNIT-II: GRAMMAR

- (1) Direct and Indirect speech
(2) Simple, compound and complex sentences
(3) Transformation of sentences
(a) Voice (b) Degrees of comparison (c) Kinds of sentences

UNIT-III: READING COMPREHENSION

- (1) Identifying the main theme /central idea/topic of a given passage.
(2) Locating specific theme and identifying general ideas in a given passage.
(3) Testing the Knowledge of Vocabulary and Grammar of the Candidate.

UNIT-IV:

PRECIS-WRITING

UNIT-V: WRITING

- (1) Dialogue writing
(2) Essay writing

RECOMMENDED READING:

- (1) Thomson and Martinet: A Practical English Grammar
(2) Bhaskaran and David Hoeshburgh: Strengthen Your English, OUP 1973
(3) Sarah Freeman: Written Communication in English, Oriented Longman, 1977

కె.వి.ఆర్. ప్రభుత్వ మహిళ డిగ్రీ కళాశాల - కర్నూలు

స్వయం ప్రతిపత్తి 2015-2016

బి.ఎ (ఆర్.డి) మొదటి సంవత్సరము -ప్రత్యేక తెలుగు

పాఠ్యప్రణాళిక

మొదటి సెమిస్టరు

1. శకుంతలోపాఞ్చనము నన్నయ - అంధ్రమహాభారతం - ఆదిపర్వము
చతుర్థాశ్వాసము - (6వ పద్యము నుండి 109వ పద్యము వరకు)
2. వసువర్జిత - రామరాజ భాషణుడు-వసువర్జిత-శృతియాశ్వాసము
(26వ పద్యము నుండి 50వ పద్యము వరకు)
3. కన్యాశుల్కం - నాటకం - గురజాడ వేంకట అప్పారావు

రెండవ సెమిస్టరు

1. దేవుని - పారిస్ భ్రతి
2. రోయల - రాయప్రోలు సుబ్బారావు
3. గోపంగి - ఎంద్రుని సుభాకర్
4. గజ్జెలం - గుజ్జం జోషుని (మొదటి భాగం 1వ పద్యము నుండి 20 పద్యాల వరకు)
5. సీతానందేశం - మొల్ల రామాయణం - మందరకొండం
91వ పద్యము నుండి 124వ పద్యము వరకు

B.A.RURAL DEVELOPMENT

Academic Year 2015-16

Paper-I: Elements of Rural Development

Unit-1

Definition of Rural Areas-Meaning of Development-Concept of Rural Development-Causes of Rural Backwardness-Nature and Scope of Rural Development in India.

Unit-2

Approaches of Rural Development in India: Gandhi an Approach-Decentralized Planning Approach-Sectoral Approach-Area Approach-Target Group Approach-Integrated/Holistic Approach-Participatory Approach-Rights Approach.

Unit-3

Rural Health-Health Care Services in Rural Areas-Maternal and Child Health-HIV/AIDS-National Health Policy of India-National Rural Health Mission.

Unit-4

Education in Rural Areas-Problems in School Education: School Dropouts and Girl Child Education-Sarva Siksha Abhiyan- National Literacy Mission-National Education Policy.

Unit-5

Rural Housing: Status, Problems and Programmes-Drinking Water Supply: Sources, Problems and Programmes-rural Sanitation: Problems and Programmes.

Books and References

- 1.N.I.R.D :Facets of Rural Development in India
- 2.S.C. Jain :Rural Development
- 3.Misra & Sarma : Problems and prospects of Rural Development in India
- 4.K.Venkata Reddy :Rural Development in India: Poverty and Development, Himalaya Publishing House,Mumbai,2012
- 5.Rajasekhar D (Ed) :Prof G Parthasarathi's Writings on Indian Rural Economy in Transition
- 6.Katar Singh :Rural Development: Principles,Policies & Management
- 7.G.Sreedhar and :Rural Development in India:Strategies and Processes, D.Rajasekhar Concept Publishing House,New Delhi,2014

Publications of A.P.Telugu Academy

Journals:Kurukshetra,Yojana,Khadi Gramodyog,Journal of R.D

B.A.RURAL DEVELOPMENT

Academic Year 2015-16

Paper-II: Rural Development Policies and Programmes

Unit-1

Pioneering Efforts in Rural Reconstruction: Sriniketan - Martandam-Sevagram-Baroda-Firka Development Scheme-Nilokheri- Etawa Pilot Project.

Community Development Programme and National Extension Service- Panchayati Raj Institution-73rd Constitutional Amendment Act-Transfer of Functions and Powers to PRIs

Unit-2

Area Development Programmes:Drought Prone Area Programme – Command Area Development Programme- Desert Development Programme-Hill Area Development Programme-Integrated Tribal Development Agency – Tribal Development Corporation.

Unit-3

Target Group Programmes – Swarnajayanti Gram Swarojgar Yojana – National Rural Livelihood Mission – Micro Finance and Self –help Group for Women Empowerment:Functioning of Velugu/Indira Kranthi Patham in A.P.

Unit-4

Employment Generation Programs-MGNREGS:Strategy,Implementation mechanism and Problems- Prime Minister's Grameen Rajogara Yojana.

Unit-5

National Social Assistance Programme – Rastriya Swasthya Bima Yojana – Aam Admi Bima Yojana – National Food Security Mission.

Books and References

- 1.N.I.R.D :Facets of Rural Development in India
- 2.S.C. Jain :Rural Development
- 3.K.Venkata Reddy :Rural Development in India: Poverty and Development, Himalaya Publishing House,Mumbai,2012
- 4.Katar Singh :Rural Development: Principles, Policies & Management
- 5.G.Sreedhar and D.Rajasekhar :Rural Development in India: Strategies and Processes, Concept Publishing House, New Delhi,2014
- 6.Susan Johnson and Ben Rogally :Micro Finance

Publications of A.P.Telugu Academy

Journals: Kurukshetra, Yojana, Khadi Gramodyog, Journal of R.D

Psychology

K.V.R Govt. College (W), Kurnool
(Autonomous)

Degree I B.A. Psychology Curriculum 2015-16

Semester – I 60 hrs

Paper - I General Psychology

Time : 3

Hours Marks : 75

Unit-I: Introduction

Definition and scope of psychology, Fields of psychology - Schools of psychology, Methods of psychology - introspection, observation case study, Interview, survey and Experimental method.

Unit - II : Biological Basis of Behavior

A . Nervous system and its organization - The structure of ne\$ron central nervous system - Brain and spinal cord. Autonomic nervous system

B. Hormonal basis of behavior - The major endocrine glands and their funclitns

C. Mechanisms of heredity - Influence of heredity and environment on behavior

Unit-III:Attention

Definition, Different aspects of attention - Span, division, distratation and fluctuation VolQary and invflutary attention determinents of attention.

Unit - IV : Sensation and Perception

Difference between sensation and percepetion, Principles of perceptualorganizaiton. Percetual constrancy, Movement perception. Internal and external factors influencing perceptual experience, illusions

Unit - V : Motiovation and emotion

Definition types of motives - Physiological and psychosocial motives, Maslow's theory of motivation emotion - Definition and nature of emotions. Theories of emotion James - Lange, Cannon - Bard and schacter - Singer.

Approved by :

1	V.V.Sesha Reddy	Chairperson BOS	<i>V.V.Sesha Reddy</i> 26/6/15
2	Dr. K.Lalitha	University Nominee	<i>K. Lalitha</i>
3	Dr.G.Koteswaraiah	Subject Expert	<i>Dr. G. Koteswaraiah</i> 26/6/15
4	Dr.S.Shamsuddin	Subject Expert	<i>Dr. S. Shamsuddin</i>
5	Smt. ~~D~~ Krishnaveni	Corporate	<i>D. Krishnaveni</i> 26/6/15
6	Miss N. Parvathi	Alumnus	<i>N. Parvathi</i>

K.V.R Govt. College (W), Kurnool
(Autonomous)
Degree I B.A. Psychology Curriculum 2015-16
Semester - II 60 hrs
Paper - I General Psychology

Time: 3

Hours Marks : 75

Unit-I: Learning

A. Definition - Maturation and Learning Classical and instrumental conditioning learning by insight and observation

B. Role of motivation, Reward and punishment in Learning. Learning curves, Efficient methods of Learning, Transfer of Learning.

Unit - II : Memory and forgetting

Meaning of memory Types of memory Methods of Measuring Memory Information processing model of memory causes of forgetting methods of improving memory.

Unit-III: Thinking

Nature of Thinking : concepts, Deductive and inductive reasoning, Problem solving - Impediments to problem solving - creative Thinking stages - Characteristics of creative people.

Unit - IV : States of consciousness

Sleep and dreams, Hypnosis, Meditation, Drug - induced states of consciousness

Unit-V: Intelligence

A. Definition - Theories of intelligence - Spearman Two factor theory Thurstone Multifactor Theory Sternberg's Triarchic theory of intelligence

B. Measurement of Intelligence - Concept of I.Q. types of intelligence tests variations in intellectual ability intellectually gifted and related factors influencing individual differences in intelligence - Heredity and Environment. Experiments to be completed in 1st Year.

Attention : 1. Span of attention for visual stimuli

2. Effect of auditory and visual distraction on attention

3. Division of attention with similar and dissimilar tasks

Perception : 4. Measuring illusion using Muller - Lyer illusion figure

5. Determination of two point threshold

Approved by :

1	V.V.Sesha Reddy	Chairperson BOS	<i>V.V.Sesha Reddy</i>
2	Dr. K.Lalitha	University Nominee	<i>K.Lalitha</i>
3	Dr.G.Koteswararajah	Subject Expert	<i>Dr.G.Koteswararajah</i> 26/6/15
4	Dr.S.Shamsuddin	Subject Expert	<i>Dr.S.Shamsuddin</i>
5	Smt. D. Krishnaveni	Corporate	<i>D. Krishnaveni</i> 26/6/15
6	Miss N. Parvathi	Alumnus	<i>N. Parvathi</i>

Botany

I B. Sc., BOTANY

Course Content; A Y: 2015-16

SEMESTER-I

PAPER-I

PAPER – I: Micro diversity, Algae & Fungi

UNIT- I: MICROBIOLOGY

(18hr)

1. **VIRUSES:** Structure, reproduction transmission and general account of symptoms with special reference to Leaf curl of Papaya and Tobacco mosaic. (6hr)
2. **BACTERIA:** Structure, nutrition, reproduction, economic importance. Bacterial diseases of crop plants – citrus canker and leaf blight of paddy.(6hr)
3. **CYANOBACTERIA:** Cell structure ,thallus organization and Structure and life history of Oscillatoria and Nosto. (4hr)
4. Biofertilizers and SCPs. (2hr)

UNIT- II: ALGAE

(18hr)

5. General account, thallus organization, structure, reproduction and classification of Algae (Fritsch). (4hr)
6. Structure ,reproduction and life history of Oedogonium,Chara.(6hr)
7. Structure ,reproduction and life history of Ectocarpus and Polysiphonia. (6hr)
8. Economic importance of Algae. (2hr)

UNIT- III: FUNGI

(24hr)

9. General characters, classification and economic importance.(2hr)
10. Structure, reproduction and life history of Albugo, Pencillium and Puccinia. (10hr)
11. Integrated Disease Management -with special reference to Tikka disease of Ground nut, Late blight of Potato, Smut of Sorghum and Paddy blast. (8hr)
12. Lichens : Types , structure,reproduction,ecological significance and economic importance.(4hr)

I B. Sc., BOTANY
Course Content; A Y : 2015-16
SEMESTER-II **PAPER-II**

PAPER – II: Diversity of Archegomaiates & Plant Anatomy

UNIT- I : BRYOLOGY **(15 hr)**

1. General characters, classification and alternation of generations.(3hr)
2. Structure, reproduction and life history of Marchantia (developmental stages not necessary).(5hrs)
3. Structure, reproduction and life history of Anthoceros (developmental stages not necessary).(5hrs)
4. Evolution of Sporophytes in Bryophytes. (2hr)

UNIT- II : PTERIDOLOGY **(18 hr)**

5. General characters and classification. (3hr)
6. Structure, reproduction and life history of Lycopodium. (6hr)
7. Structure, reproduction and life history of Marsilea.(6hr)
8. Stellar evolution. (3hr)

UNIT- III : GYMNOSPERMS **(18hr)**

9. General characters, Classification and Economic importance.(4hr)
10. Structure, reproduction and life history of Pinus. .(5hr)
11. Structure, reproduction and life history of Gnetum.(5hr)
12. Paleobotany-concept, Fossils and Fossilization-Process, factors, Types of fossils and their importance.(4hr)

SEMESTER-I
PAPER – I: Micro diversity, Algae & Fungi

Practical List

- 1 .Knowledge of equipment used in Micro biology – Spirit Lamp, Hot air oven etc.
- 2, Preparation of liquid and solid medium
3. Study of Viruses and Bacteria
4. Gramstaining technique
5. Study of plant diseases
6. a. Cyanobacteria – Nostoc, Scytonema
- b. Algae – Oudogonium, Ectocarpus, Polysiphonia
- c. Fungi- Rhizopus, Penicillium and Puccinia
- 7 Diseases caused by Fungi
8. Lichens – Morphology & Anatomy

SEMESTER-II

PAPER – II: Diversity of Archegoniates & Plant Anatomy

Practical List

- 1 .Bryophyta – Marchantia, Polytrichum
2. Pteridophyta- Lycopodium, Marsilea
3. Gymnosperms – Pinus, Gnetum
4. Tissues in Root Shoot Apices
5. Anatomical secondary structure in Achyranthus, Boerhaavia and Dracaena
6. Anatomical study of wood T.S, T.L.S and R.L.S

Zoology

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

(w. e. f. 2015-2016)

DEPARTMENT OF ZOOLOGY

FIRST YEAR - FIRST SEMESTER SYLLABUS

PAPER-I: ANIMAL DIVERSITY OF INVERTEBRATES

UNIT I

1.0 Protozoa to Coelenterata

1.1 Phylum Protozoa: General characters and outline classification up to classes. 5 hours
Type study: Paramecium: Structure, Reproduction (conjugation) and nutrition in Phylum protozoa only.

1.2 Phylum Porifera: General characters and outline classification up to classes.
Type study: Sycon, Canal system in Sponges. 5 hours

UNIT II

2.1 Phylum Coelenterata: General characters and outline classification up to classes.
Type study: Obelia, Polymorphism in Coelenterates, corals and coral reef formation. 7 hours

2.2 Phylum Platyhelminthes: General characters and outline classification up to classes.
Type study: Fasciola hepatica; Structure, Reproduction and life history. 5 hours

UNIT III

3.0 Nematihelminthes to Annelida

3.1 Phylum Nematihelminthes: General characters and outline classification up to classes.
Type study: Ascaris lumbricoides; Structure and life history. 3 hours

3.2 Phylum Annelida: General characters and outline classification up to classes
Type study: Leech: Structure, Excretory, Reproductive systems. 5 hours

UNIT IV

4.0. Arthropoda to Hemichordata

4.1 Phylum Arthropoda: General characters and outline classification up to classes
Type study: Prawn appendages, digestive system, nervous systems in prawn. crustacean larvae.

4.2 Peripatus characters and significance. 10 hours

UNIT V

5.0 Mollusca

5.1 Phylum Mollusca: General characters and outline classification up to classes
Type study: Pila digestive, respiratory systems, torsion in Molluscs; Pearl formation in Molluscs. 8 hours

UNIT VI

6.0 Echinodermata to Hemichordata

6.1 Phylum Echinodermata: General characters and outline classification upto classes

Type study: Asterias : digestive systems, Water Vascular system. ; larvae in echinoderms.

7 hours

6.2 General characters of Hemichordata: Structure and affinities of Balanoglossus. 5 hours

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
(w. e. f. 2015-2016)

DEPARTMENT OF ZOOLOGY

FIRST YEAR - SECOND SEMESTER SYLLABUS
PAPER-II: ANIMAL DIVERSITY OF VERTEBRATES

UNIT-I **10 hours**

- 1.0 Protochordates: Salient features of Urochordata and cephalochordata
- 1.1 Structure and life history of *Herdmania*, Significance of Retrogressive metamorphosis.
- 1.2 General characters of chordates.

UNIT- II **12 hours**

- 2.0 General characters of Cyclostomes.
- 2.1 General characters of fishes Classification up to class level with example.
- 2.2 Type study-**SCOLIODON**: Morphology, Respiratory system, circulatory system(Heart)
Excretory system, sense organs, nervous system(Brain).
*Migration of fishes and types of scales.

UNIT- III **08 hours**

- 3.0 General characters and classification of Amphibian up to class level.
- 3.1 Type study- **RANA**: Morphology, Digestive system, Respiratory system, circulatory system(Heart). Brain
*Parental care in Amphibians.

UNIT IV **08 hours**

- 4.0 General characters and classification of Reptilian up to class level.
- 4.1 Type study- **CALOTES**: Morphology, circulatory system (Heart),
* Differences between poisonous and non poisonous snakes.

UNIT-V **12 hours**

- 5.0 General characters and classification of Aves up to class level with examples.
- 5.1 Type study- **PELION** (*COLUMBA LIVIA*): Exoskeleton (Quill feather)
Respiratory system.
*Significance of Migration in Birds. Flight adaptations in birds.

UNIT- VI **10hours**

- 6.0 General characters and classification of Mammals up to class level with examples.
- 6.1 Type study: **RABBIT**: Digestive system ,circulatory system(Heart), Nervous system (Brain),
Tooth structure, dental formula, in Mammals
* Comparative study of respiratory system, heart of all vertebrates.

ANNEXURE – III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

FIRST YEAR ZOOLOGY

(w.e.f. 2015-2016)

PRACTICAL PAPER – I

ANIMAL DIVERSITY OF INVERTEBRATES

I. Observation of the following slides / specimens / models:

Protozoa - Paramoecium - binary fission and Conjugation.

Porifera - Spongilla,

Coelenterata - Physalia, , Gorgonia,

Platyhelminthes and Nematelminthes - Planaria, Larval stages of Fasciola-Miracidium, Redia, Cercaria,

Annelida - Nereis, Hirudo, Trochophore larva.

Arthropoda -, Peripatus.

Mollusca - Unio, Sepia, Octopus Glochidium larva.

Echinodermata - Asterias, Ophiothrix, Bipinnaria larva.

Hemichordata - Balanoglossus, Tornaria larva.

Demonstration of dissection/ dissected / Virtual Dissections:

1. Nervous system of Prawn
2. Appendages of Prawn

ANNEXURE – III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
FIRST YEAR ZOOLOGY
(w.e.f. 2015-2016)

PRACTICAL PAPER – II

ANIMAL DIVERSITY OF VERTEBRATES

Protochordata: Herdmania, Amphioxus, Amphioxus T.S. through Pharynx.

Cyclostomata: Petromyzon, Myxine.

Pisces: Hippocampus, Exocoetus, Scales of fishes,

Amphibia: Amblystoma, Axolotal larva, Hyla, Rana.

Reptalia: Chamaeleon, Uromastix, Russell's viper, Naja, Crocodile.

Aves: Passer, Psittacula, Pigeon, Corvus, peacock,
Study of different types of feathers: Quill.

Mammalia: Ornithorynchus, Pteropus.

Osteology: Appendicular skeletons of pigeon and Rabbit--- Fore limbs, Hind limbs and Girdles

Demonstration of dissection/ dissected / Virtual Dissections:

1. V, VII, IX, X Cranial Nerves of Shark.
2. Arterial system of Shark

- **Laboratory record work shall be submitted at the time of Practical Examination.**
- **Compulsory one species to be adopted for demonstration only by the faculty.**

REFERENCE BOOKS

1. The Invertebrates' by L.H. Hyman. vol I, II and v. - M.C. Graw Hill company Ltd '
2. Invertebrate Zoology' - A functional Evolutionary approach. Ruppert, Fox and Barnes., Thomas publishers' Indian Edition'
3. Invertebrate Zoology' by E.L. Jordan and P.S. Verma., S.Chand and company'
4. 'Invertebrate Zoology' by R.D. Barnes: W.B. Saunders CO "1986"
5. Invertebrate structure and Function, by Barrington. E.J.W., ELBS.
6. A student text book of Zoology' by Sedgwick, A., Vol-I, II and III - Central Book Depot, Allahabad.
7. A text book of Zoology, by Parker, T.J. and Haswell, W.A., Mac Millan Co. London.
8. 'Textbook of Invertebrates' by Kavita Juneja and H.S. Bhamrah'
9. Modern text book of zoology vertebrates.....R.L Kotpal
10. text book of vertebrata Jordan & Verma

Chemistry

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM
FIRST YEAR B.Sc. CHEMISTRY
FIRST SEMESTER
COURSE -I: INORGANIC CHEMISTRY-I, GENERAL CHEMISTRY-I
(w. e. f. 2015-2016)

1. s,p-block elements:

14h

General characteristics of groups I & II elements, diagonal relationship between Li & Mg, Be & Al.

Oxides and Halides of elements of groups 13, 14, 15

Group – 13: Synthesis and structure of diborane, Triborane & tetraborane, B₃N₃H₆, BN (Elementary structural treatment)

Group – 14: Preparation and applications of silanes and silicones.

Group – 15: Preparation and reactions of hydrazine, hydroxylamine.

2. Atomic Structure and elementary quantum mechanics

8 h

Blackbody radiation, Planck's radiation law, photoelectric effect, Compton effect, de Broglie's hypothesis, Heisenberg's uncertainty principle. Postulates of quantum mechanics (derivation not required) Schrodinger wave equation and a particle in a one dimensional box, and derivation of Schrodinger wave for a one dimensional box, Schrodinger wave equation for H-atom. quantum numbers and their importance.

3. Chemical Bonding

8 h

Valence bond theory, hybridization: postulates of VB theory and applications to the structures of ClF₃, BrF₅, XeF₂, XeOF₄. **Dipole moment:** dipole moment and structures of molecules of CO₂, H₂O, OF₂ **Molecular orbital theory** : LCAO method, construction of M.O. diagrams for homo-nuclear and hetero-nuclear diatomic molecules (N₂, O₂, CO and NO). Comparison of VB and MO theories.

4. P-BLOCK ELEMENTS

9h

Group – 16: preparation, properties and structures of O_3 , SO_2 , SO_3 .

Group – 17: Inter halogen compounds: preparation and structures of ICl , IF_7 and pseudo halogens (Cyanogen)

General Principles of Inorganic qualitative analysis

Solubility product, common ion effect, characteristic reactions of anions, separation of cations into groups, group reagents. testing of cations- Pb^{2+} , NH_4^+ , Ni^{2+} , Ca^{2+}

5. Nuclear Chemistry

10 h

Chemical reaction and nuclear reaction, Composition of nucleus, nuclear stability, mass defect, Binding energy, Packing fraction, n/p ratio, natural radio activity, group displacement law, half life period, radioactive disintegration series, artificial transmutation of atoms, classification of nuclear reactions, nuclear fission and nuclear fusion.

6. Stereochemistry-I

10 h

Molecular representations-Wedge, Fischer, Newman and saw-horse formulae.

Stereoisomerism: Optical isomerism: enantiomers, diastereomers- definition and examples.

Optical activity- optical rotation and specific rotation (definitions only). Elements of symmetry (plane, axis, inversion, rotation-reflection) examples : Glyceraldehyde, Lactic acid, Alanine

Definition and examples of D, L and R, S configuration Cahn-Ingold-Prelog rules. Racemic mixture- racemisation and resolution techniques.

ANNEXURE - II

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM

FIRST YEAR B.Sc. CHEMISTRY

SECOND SEMESTER

Core Course-I: ORGANIC CHEMISTRY AND PHYSICAL CHEMISTRY

(w. e. f. 2015-2016)

1. Structural theory in Organic Chemistry

14h

Types of bond fission and organic reagents (Electrophilic, Nucleophilic, and free radical reagents

Electron displacement mechanism: (i) inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (ii) Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids.(iii) Hyper conjugation and its application to stability of carbonium ions.

Types of Organic reactions : Addition – electrophilic, nucleophilic and free radical. Substitution

– electrophilic, nucleophilic and free radical. Elimination-(E1,E2) Examples (mechanism not required).

Alicyclic hydrocarbons (Cycloalkanes)

Nomenclature, Preparation by Freunds methods, heating dicarboxylic metal salts. Properties – reactivity of cyclopropane and cyclobutane by comparing with alkanes, Stability of cycloalkanes – Baeyer's strain theory,

2. Gaseous state

9 h

Compression factors, deviation of real gases from ideal behavior. Derivation of Van der Waal's equation of state Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. Relationship between critical constants and vanderwaal's constants. The law of corresponding states and reduced equation of states. Joule-Thomson effect. Liquefaction of gases: i)Linde's method and ii) Claudes method.

3. Solutions

7h

Liquid-liquid solutions,Types of solutions

(a)completely miscible solutions: Raoult's law. Ideally dilute solutions, Henry's law. Non-

ideal solutions. Vapour pressure – composition and vapour pressure-temperature curves.

Azeotropes-HCl-H₂O, ethanol-water systems and fractional distillation. (b) Partially miscible

liquids-phenol-water, trimethylamine-water, nicotine-water systems. Effect of impurity

on consolute temperature.(c) Immiscible liquids and steam distillation.
Nernst distribution law. Calculation of the partition coefficient. Applications of distribution law.

4. Acyclic Hydrocarbons

15 h

Alkanes– Methods of preparation: Hydrogenation of alkynes and alkenes, Wurtz reaction, Kolbe's electrolysis, Corey- House reaction. Chemical reactivity – inert nature, free radical substitution mechanism. Halogenation example

Alkenes – Preparation of alkenes (a) by dehydration of alcohols (b) by dehydrohalogenation of alkyl halides (c) by dehalogenation of 1,2 dihalides. Properties: Addition of hydrogen. Addition of Br₂ and its mechanism. Markonikov's rule: Addition of HX, addition of H₂O, H₂SO₄ and anti – Markonikov's addition: addition of HBr in the presence of peroxide. Oxidation – hydroxylation by KMnO₄ , peracids (via epoxidation)

Alkynes – Preparation by dehydrohalogenation of dihalides, dehalogenation of tetrahalides, Properties; Acidity of acetylenic hydrogen (formation of Metal acetylides). Preparation of higher acetylenes, electrophilic addition of H₂O (Tautomerism), Polymerisation reaction of acetylene.

Benzene and its reactivity

Concept of aromaticity – aromaticity (definition), Huckel's rule – application to Benzenoid (Benzene, Napthalene) and Non – Benzenoid compounds (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation)

Reactions – General mechanism of electrophilic substitution, mechanism of nitration. Friedel Craft's alkylation and acylation. Orientation of aromatic substitution – Definition of ortho, para and meta directing groups. Ring activating and deactivating groups with examples R= -CH₃, -NO₂, -Cl. Orientation of monosubstituted benzene with R= -CH₃, -NO₂, -Cl.

5. Solid state

09 h

Symmetry elements in crystals. Laws of crystallography
.Definition of lattice point, space lattice, unit cell. Bravais lattices and crystal systems. X-ray diffraction. Bragg's law.

structure of NaCl and KCl crystals.(elementary treatment)

Defects in crystals. Stoichiometric and non-stoichiometric defects. Band theory of semiconductors. Extrinsic and intrinsic semiconductors, n- and p-type semiconductors and their applications in photo electrochemical cells.

6. Colloids and surface chemistry

6 h

Definition of colloids.(a) Solids in liquids(sols), preparation, properties - kinetic,optical,electrical. Stability of colloids, Hardy-Schulze law, protective colloid.

(b)Liquids in liquids (emulsions) preparation, properties, uses.(c) Liquids in solids (gels)

preparation, uses.

Adsorption: Physical adsorption, chemisorption. Freundlich, Langmuir adsorption

isotherms. Applications of adsorption

Textbooks/Referencebooks

Inorganic Chemistry

1. Concise Inorganic Chemistry by J.D.Lee
2. Basic Inorganic Chemistry by Cotton and Wilkinson
3. Qualitative Inorganic analysis by A.I.Vogel
4. A textbook of qualitative inorganic analysis by A.I. Vogel
5. Inorganic Chemistry by J.E.Huheey
6. Organometallic Chemistry – An introduction by R.C.Mehrotra and A.Singh
7. Selected topics in inorganic chemistry by W.D.Malik, G..D.Tuli, R.D.Madan
8. Concise coordination chemistry by Gopalan and Ramalingam

Organic Chemistry

9. Organic Chemistry By R T Morrison and R.N.Boyd
10. Organic Chemistry by T.J.Solomons
11. Problems and their solutions in organic Chemistry by I.L.Finar
12. Reaction mechanisms in Organic Chemistry by S.M.Mukherji and S.P.Singh
13. Text book of Organic Chemistry by K.S.Mukherjee

Physical chemistry books.

1. Physical chemistry A molecular approach by Donald A. Mcquarrie and John D. Simon.
2. Physical chemistry by G M Barrow
3. Principles of physical chemistry by Prutton and Marron
4. Physical chemistry by Peter Atkins, Julio D. Paula
5. Physical Chemistry by Ira N Levine
6. Elements of Physical Chemistry by Peter Atkins, Julio D. Paula
7. Text book of physical chemistry by K L Kapoor
8. Text book of physical chemistry by S Glasstone
9. Quantum chemistry by Manas chanda

ANNEXURE – VI

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM

FIRST YEAR B.Sc. CHEMISTRY

(w.e.f. 2015-2016)

LIST OF PRACTICALS

Paper - I

LABORATORY COURSE- I

90 hrs (3 h / w)

Practical Paper – I (Inorganic Chemistry)

Qualitative Analysis and Inorganic preparations:

Analysis of mixtures containing two anions (one simple and one interfering) and two cations (of different groups) from the following:

Anions: Carbonate, sulfide, sulphate, chloride, bromide, iodide, acetate, nitrate, oxalate, tartrate, borate, phosphate, arsenate* and chromate*.

Cations: Lead, copper, bismuth, cadmium, tin, antimony, iron, aluminum, zinc, manganese, nickel, cobalt, calcium, strontium, barium, potassium and ammonium.

*not to be given for examination.

Preparations: Any three of the following inorganic preparations:

- 1) Ferrous ammonium sulphate
- 2) Tetrammine copper (II) sulphate
- 3) Potassium trisoxalato chromate
- 4) Potash alum $KAl(SO_4)_2 \cdot 12H_2O$
- 5) Hexammine cobalt (III) chloride.

Home Science

Annexure I

SYLLABUS FOR THE I & II SEMESTER 2015-17

MODULE- HSC.101 PSYCHOLOGY & PERSONALITY DEVELOPMENT

Learning Outcome

- Develop an understanding of human behavior and personality.
- Create awareness about various psychological processes underlying human behavior.
- Stimulate the student to think, introspect and work on to develop their Personality

Theory

Unit I Psychology -Introduction, scope and branches of Psychology

- ❖ Methods of Psychology- observational, experimental, clinical and survey
- ❖ Motivation- definition –Psychological basis- classification- physiological and psychological and social motives, unconscious motivation
- ❖ Emotion – Definition, components and development of emotion

Unit II Cognition and its processes- meaning, importance

- ❖ Attention- Attention types and its determinants
- ❖ Perception –Object perception and perceptual constancies, organization of perception

Unit III Learning & Memory- Definition and Importance,

- ❖ Methods of learning - Theories of learning- classical and operant conditioning, trial and error, acquisition of skills,
- ❖ Memory - types of memory, nature of forgetting and methods to improve memory

Unit IV Intelligence – Definition and factors affecting intelligence.

- ❖ Emotional Intelligence- Definitions and Significance
- ❖ Aptitude and Interest- Definition of the terms and importance

Unit V Personality- Definition, Dimensions & Types

- ❖ Factors influencing personality

References:

1. Anastasi, A. (1988). Psychological testing (6th edition).New York: Macmillan
2. Bloom,B.S., Madaus,G.J.Hastings,J.T.(1981). Evaluation to improve learning. New York: McGraw Hill.
3. Cronbach, L.J. (1990). Essentials of Psychological Testing (5th edition).New York:
4. Introduction to Psychology – Morgan C. T., King R. A.
5. Mangal, S.K, Introduction to Psychology

MODULE-HSC102. HUMAN PHYSIOLOGY

Learning Outcome:

To introduce structure and function various system of the body

Theory

Unit I Introduction to various systems of the body

- Animal Cell and Tissue : structure, functions of each component of the cell,
- Tissues: Functions of various types of tissues
- **Skeletal system**- Bones and Joints- Types & function
- **Nervous system**- Structure of neuron, reflex action , spinal chord , brain and their membrane, autonomic nervous system,

Unit II Digestive &Excretory system

- Structure and functions of salivary glands, stomach, small intestine, pancreas, and liver.
- Organs of excretion, their structure and functions (Kidneys, ureters and Urinary Bladder)
- Mechanism of urine formations.
- Skin - Structure and functions of skin, Regulation of body temperature.

Unit III Circulatory & Cardiovascular system

- Blood – Composition and functions of blood, Coagulation of blood & its significance. Blood groups and Rh factor
- Heart – Structure and functions of Human heart, Cardiac cycle.
- Blood Pressure – Systolic and diastolic Blood pressures

Unit IV Male & Female Reproductive System

- Anatomy of Spermatogenesis
- Structure and functions of Ovaries, fallopian tubes and uterus
- Menstrual cycle, ovulation and menopause.

Unit V Endocrine glands- Hormone and their influence on metabolism and reproduction

- Structure and function of pituitary gland, thyroid gland, Adrenal gland and Pancreas

References:

7. Best and Taylerr: Human Body.
8. Guyton A.C.,& Hall, A. J. – Text Book of Medical Physiology.
9. K. Sembulingam – Essentials of Medical Physiology.
10. Chaterjee C. C.- Human Physiology.
11. N.Murugesh , 2000, Anatomy, Physiology and Human Health
12. VidyaRatan, 2001, 7th edition, Handbook of Human Physiology, Jaypee Brothers Medical Publisher's :, Pvt. Ltd

MODULE- HSC103. HEALTH, HYGIENE & MICROBIOLOGY

Learning Outcome:

- To understand the concept of good health and means to achieve it.
- Understand the , classification morphology, growth and reproductive features of various micro organisms
- Acquire the skills in various sterilization techniques

Unit I Health – Definition & meaning

- Dimension of health – social, mental, spiritual, emotional, vocational
- Determinants of Health
- Indicators of health- concept of Mortality, Morbidity, Disability

Unit II Classification & Study of Microorganisms- in terms of morphology, growth, Nutrition and Reproduction

- Bacteria, Virus, Yeasts, Algae and Mould
- Study of Parasites – Entamoeba, Hookworm, Tapeworm

Unit III Mode of infection

- Food borne diseases caused by microorganisms-Typhoid, Cholera, Dysentery, Amoebic dysentery, Jaundice
- Diseases transmitted by Mosquitoes- malaria, filariasis and control methods.
- Disease caused by direct contact through cuts and abrasions, skin disease, conjunctivitis, leprosy, tetanus

Unit IV Prevention & Control

- Hygiene - Meaning and importance
- Control of Micro-organisms – Sanitation, Sterilization & Disinfection- Physical and chemical method.

Unit V Immunity

- Immunity- definition & types
- Immunization schedule

References:

10. Frazier, W. Candwestnoff, D.C (1997) Food Microbiology, Tata McGraw Hill
11. A.S. Rao 2001 Introduction to microbiology, Prentice Hall of India
12. Anna k. Joshua, Microbiology, popular book depot, Madras
13. Pelczar and Reid, 1983, Microbiology, Tata McGraw-Hill Publishing Company LTD.
14. R. Ananthanarayanan, C.K.J. Paniker, 2001, Orient Longman Private Limited.
15. Hans G. Schlegel, 2002, 6th edition, Cambridge low price editions
16. General Microbiology , 1982, power & Dagenawala, Himalaya Publishing House
17. Stanier R. Y., Adelberg, E.A. and Ingraham, J.L. (1989) General Microbiology.
18. Atlas R. M. (1988) Microbiology, fundamentals and application. Micmillon N.

MODULE- HSC.201. INTRODUCTION TO HUMAN DEVELOPMENT

Learning Outcome

- Introduction the concepts, importance and scope of human development
- Know about various areas and factors affecting growth and development
- Learn about pregnancy and care of the newborn

Theory

Unit I: Introduction

- Human Development: Definition, brief history and interdisciplinary nature
- Scope of the Human Development in contemporary society

Unit II: Lifespan Approach to Development

- Domains and stages of development
- Concepts and Principles of growth and development
- Determinates of Development- Heredity and Environment, Maturity and Learning

Unit III: Prenatal development

- Conception and Reproduction
- Prenatal development
- Pregnancy - care during pregnancy

Unit IV: Delivery and Birth process

- Stages of Delivery &Types of birth
- Characteristics of new born,
- Physiological changes and adjustments in post natal life
- Postnatal care of nursing mother

Unit V: Care of New Born Baby

- Care of full term and Premature babies
- Reflexes in new born
- Stimulation and its importance

Reference

1. Grace.J.Craig, 1976, Human Development, Prentice Hall INC, New Jersey, p-p 1-3.
2. Papalia D.E and Old S.W. 1978, Human Development, McGrawHillInc, London p-p 3-5.
3. Kaluger, George and Kaluger, Merriam Fair (1979). "Human Development: The span of life", C.V Mosby Company, New York.
4. Santrock, J. W. (2006). Child development. New York: McGraw Hill.

MODULE - HSC202.NUTRITIONAL BIOCHEMISTRY

Learning Outcome:

- Know the basic mechanisms involved in water and acid-base balance.
- Understand the macro nutrients and micro nutrients in terms of their composition, Classification, sources, functions and metabolism
- Learn about Vitamins & Minerals- their sources, function and deficiencies.

Unit I Introduction to Nutritional Biochemistry

- Definition and scope of biochemistry.
- Relevance of biochemistry to nutrition and health.
- Acid and Base balance, pH and Buffer
- Oxidation and Reduction reaction

Unit II Carbohydrates

- Composition, classification, sources and functions of carbohydrates
- Metabolism of carbohydrates- Glycolysis, gluconeogenesis, TCA cycle

Unit III Lipids

- Composition, classification, sources and functions of lipids
- Lipids metabolism- β -Oxidation and biosynthesis of fatty acids, Ketone bodies

Unit IV Proteins

- Definition, composition, classification, sources and function
- Metabolism of proteins - urea cycle

Unit V Micronutrients, Enzymes, Hormones

- Vitamins - Classification, function, sources and deficiency of vitamins.
- Minerals – sources, function and deficiency of Minerals

References

8. West E. S. Todd; Textbook of Biochemistry – Amerind Publishing Co. Pvt. Ltd.
9. Murry, R K Granner, D K Mayes, PA and Rodwell, V.W (1993); 23rd Ed Harpens Biochemistry.
10. Bamji, M. S, PrahladRao.N&Vinodinireddy, 2003, Text book of Human Nutrition, Oxford & IBH Publishing Co. PVT. LTD, New Delhi p-p 105-107.
11. Davidson. S.S. &Passmore R. 1966, Human Nutrition and Dietetics, the Williams and Wilkins company, p-p 145-157.
12. Gordon Wardlaw Gordon M. &Insel Paul M., 1992, Contemporary Nutrition, Mosby year Book, Boston p-p 304-305.
13. Robert E.C. Wildman, Denis M. Medeiros – Advanced Human Nutrition, 2000, CRC Press, Boca Raton p-p 238-243.
14. Swaminathan, M. 1997, Essentials of Food and Nutrition, vol I Second edition, BAPPCO, Bangalore.p-p 383-385

MODULE- HSC203.RESOURCE MANAGEMENT

Learning Outcomes:

- To inculcate skills in identifying, creating, selecting and using available resources judiciously with emphasis on maximization and conservation.
- To understand the scientific application of the process of management in the effective use of resources.

THEORY

Unit II Introduction to Resource Management

- Concept, scope and significance of management
- Management Process- its importance
- Characteristics of good manager

Unit II Approaches to Family Resource management –Meaning, Importance & Types,

- Interrelationship between Value, Goals and Standard
- Resources -Meaning, Classification, Importance and Characteristics
- Factors affecting management of resources.

Unit III Decision Making – importance, types, steps, method of resolving conflicts

- Planning – nature, characteristics, importance
- Organizing; Coordinating, Supervising, directing and guiding;
- Controlling- characteristics for effective control
- Evaluation – meaning, importance and methods

Unit IV Application of Management Process in:

- Time - significance, time norms, peak loads
- Energy – work curves, work units
- Ergonomics in home-Work simplification- Body mechanics, Mundel's classes of change work study techniques---pathway chart ,operation chart

Unit V Fatigue -meaning, types

- Methods of avoiding fatigue

References:

1. Home Management for Std. XI, by M.A. Verghese, N. N. Ogali, K. Srinivasan
2. Elements of Home Science by PremlataMallick.
3. Management in the Home by M. LilliamGilberth.
4. Management in Family by Living, Nickell / Dorsey.

Paper IV. HUMAN DEVELOPMENT

Theory - 4 lec / week

Theory- 100 marks

Practical -3 hrs/week

Practical-50 marks

Objectives

1. To introduce the concepts, importance and scope of the study of human development.
2. To study various areas of Human development from conception till adolescence
3. To learn about various factors affecting human development

Theory

Unit No.1 Introduction – Need, Importance and Scope of Human development

- ❖ Concepts in Human Development
- ❖ Relationship of human development with other disciplines
- ❖ Areas of human development
- ❖ Methods of child Study

Unit No.2 Growth and Development- Principles and Factors

- ❖ Role of Heredity and Environment on Growth and Development
- ❖ Developmental Tasks and Stages-Meaning, importance
- ❖ Prenatal period, Infancy period, Toddlerhood, Early childhood, Middle childhood, Adolescence and Adulthood

Unit No.3 Pregnancy, Delivery and Birth Process

- ❖ Conception and Fertilization -Signs and symptoms of pregnancy
- ❖ Minor and Major discomforts during pregnancy , Danger signals in pregnancy and Common physical hazards during prenatal period
- ❖ Effects of unfavorable Prenatal Conditions and Care during pregnancy
- ❖ Stages of prenatal period - Period of ovum, Period of embryo, and Period of fetus
- ❖ Delivery and complications during birth

Unit No.4 Characteristics and Care of New Born Baby

- ❖ Characteristics of new born, Physiological changes and adjustments in post natal life
- ❖ Reflexes in new born and care of the new born
- ❖ Care of Premature babies
- ❖ Postnatal care of nursing mother

Unit No.5 Development during Infancy /Babyhood- Developmental milestones

- ❖ Physical and Motor development
- ❖ Emergence of emotions during infancy and its development in later stages
- ❖ Social development during infancy
- ❖ Language Acquisition during infancy
- ❖ Cognitive process and Cognitive Development-Factors
- ❖ Significance of early stimulation- objectives, Areas of early stimulation and activities

Unit No.6 Early Childhood Period – Importance & Characteristics

- ❖ Physical and Motor Development
- ❖ Cognitive skills in early childhood
- ❖ Language Development
- ❖ Emotional Development - Characteristics of children's emotions
- ❖ Socialization Process -Agent of Socialization
- ❖ Moral Development

Unit No.7 Late Childhood – Meaning, Importance, Characteristics and Developmental tasks

- ❖ Physical and Motor
- ❖ Changes in Cognitive Abilities
- ❖ Social and Emotional Development
- ❖ Moral Development during school age
- ❖ Role of Family, School and Peer on overall development of school Age Children
- ❖ Puberty-Meaning, Changes-Physical, Physiological and Psychological
- ❖ Early and late maturation –effects on adolescent personality

Unit No.8 Adolescence -Meaning, Importance, Characteristics, Developmental tasks,

- ❖ Cognitive Development
- ❖ Emotional Development- Heightened emotionality , Emotional catharsis
- ❖ Social Attitudes and Behaviour during Adolescence- Influences of Peer group
- ❖ Morality During Adolescence
- ❖ Personality Development-Identity development and identity problems- delinquency, drug abuse, tobacco and smoking, alcohol and drinking, suicidal tendency, runaways- Factors and Preventive Strategies
- ❖ Problems During Adolescence- self, home and community related

PRACTICALS

Module1.

6. Study of Cultural practices with regard to Pregnancy and Child birth
7. Assessment of growth and development by using anthropometry – infant, toddler,
8. Preparation of resource files on care during prenatal period and early childhood
9. Case study of children of different age group

Module2.

1. Preparation of daily profile of a school going child/adolescent.
2. Case study report of a school going child/ adolescent.
3. Preparation of Stimulation material
4. Study of adolescent problems
5. Measuring self-concept/ self-esteem of an adolescent
6. Visit to vocational guidance and counseling center.
7. Development of resource files on various aspects of human development.

References

1. Grace.J.Craig, 1976, Human Development, Prentice Hall INC, New Jersey, p-p 1-3.
2. Papalia D.E and Old S.W. 1978, Human Development, McGrawHillInc, London p-p 3-5.
3. Kaluger, George and Kaluger, Merriam Fair (1979). "Human Development: The span of life", C.V Mosby Company, New York.
4. R.P. Devadas&N.Jaya, 1984, "A text book on Child Development", Macmillan India Ltd, Madras

Paper V- FOUNDATION OF FABRIC AND APPAREL CONSTRUCTION

Theory - 4 lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-50 marks

Objectives

1. To familiarize the students with terminology related to textiles and apparel.
2. To know Production, Properties, Use and Care of the different fabric
3. To introduce the basic methods of Apparel construction

Theory

UNIT-1. Introduction to Textiles fiber: Importance of study of textiles to the consumer

- Fibers – definition
- Polymerization
- Primary Properties of fiber
- Secondary Properties
- Classification of Textile fibers

UNIT-2. A brief study of Classification, Production, Properties, Use and Care of the following fibers:

- a) Natural cellulosic vegetable fibers – cotton, linen
- b) Natural protein animal fibers-wool, silk
- c) Manmade fibers – Rayon and acetate
- d) Synthetic fibers-Nylon, Polyester
- e) Mineral fibers- glass, asbestos and metallic fibers
- f) Mixtures and blends

UNIT-3. Yarn construction

- Types of Yarn - spun/filamentous, Mono/ multi, single/ply/ cord
- Yarn twist – types
- Yarn numbering system
- Yarn Manufacturing -Spinning- Mechanical and Chemical spinning
- Classification of yarn, their properties and uses
 - 2) simple, 2) novelty 3) bulk and textured yarn

UNIT-4. Fabric Constructions

- Weaving – Definitions, Terms, Basic weaving operation
- Types of weave- Basic and Decorative, Dobby and Jacquard attachment
- Knitting-Types of knit stitches
- Non -Woven - Felting, Bonded, Braiding and Nett

UNIT-5. Fundamentals of fabric Construction

- Sewing Machine description, use, care and repairs
- Sewing equipment and Accessories -French curve, Hip curve, L- square, Pattern making paper etc.

- Introduction to different fabric term- Muslin, Grain, Selvage, Bowing and Skewing, Dart, dart legs, dart intake, trueing and blending, plumb line, vertical lines, horizontal lines, perpendicular lines, symmetric and asymmetric lines, style number, pattern size.

UNIT- 6. Pattern Making- Concepts and Terms –Notch, Bust point, Dart, Dart intake, Trueing, Blending, Pin marking, Tape marking

- Methods of pattern making -Flat pattern, Drafting, Draping and Grading
- Pivotal point & style reading
- Fitting- principles of good fit, various fitting problems and its remedies.

UNIT- 7. Preparation of Fabric for Garment Construction

- Fabric preparation- Straightening, Shrinking, Pressing
- Taking body measurement

UNIT- 8. Stitches- Basic and Decorative Stitches

- Seam Finishes -Types of seam and suitability for different fabrics,
- Fullness -Reasons for introducing fullness s
- Types of fullness- darts, pleats, tucks, flares, gusset, gathers and shirrs, frills and ruffles
- Neckline finishes – Types of collars
- Plackets, Pockets, Sleeves

PRACTICALS

UNIT-1. Textile chemistry

4. Fiber identification- Physical, microscopic, burning and chemical test.
5. Weave identification
6. Fabric identification

UNIT- 2. Clothing construction

4. Sewing Machine description, use, care and repairs
5. Sewing equipment and Accessories
6. Simple Construction Techniques
 - Basic, Decorative and Embroidery Stitches
 - Seam and seam finishes
 - Neck line finishes
 - Plackets, Pockets and Sleeves
 - Fullness- Disposal of fullness- Dart, Gathers, Pleats, Tucks and Flare
 - Fasteners: Hook and eye, press button, velcro, button.

UNIT- 3. Fabric Construction

4. Preparation of Fabric for Garment Construction
5. Construction of Sari Petticoat, House coat and Frock
6. Market survey to see the availability of different yarns and fabrics of different weaves.

References:

1. Introductory Textile Science, M L Joseph
2. Textile fabrics and their selection, Isabel B Wingate and June F Mohler
3. Textiles by Hollen Saddler- Macmillian publishing company, New York
4. Understanding Textiles by P S Tortora-Prentice Hall Inc., New Jersey
5. Fiber to fabric by Corbman.
6. Text Book of clothing Textiles and Laundry, Sushma Gupta, NeeruGarg, RenuSaini

Paper VI: HOUSING AND INTERIOR DECORATION

Theory - 4 lec / week
Practical -3 hrs/week

Theory- 100 marks
Practical-50 marks

Learning Objectives

4. To learn about various aspects of Housing and Interior Decoration
5. To learn application of Ergonomic principle in planning family life space
6. To know about care and maintenance of house

Theory

Unit-1 Introduction to Housing

- Importance of Housing and types of houses
- Functions of a house – Its influence on health and family living.
- Housing needs in different stages of family lifecycle and economic levels.
- Housing choice - Ownership Versus Renting-Advantages and Disadvantages
- Selection of site- Importance, Factors influencing the selection of Site

Unit-2 Building Plan for Family Living

- Principles of Planning and importance of planning space
- Orientation – importance, definitions –Aspect, Prospect, Privacy, Grouping, Roominess, Flexibility, Circulation, Sanitation, Light, Ventilation, Stuffiness, Cleanliness
- Factors to be considered while planning different rooms and ways to attain Good Orientation in Residential Building
- Designing Circulation Spaces -Staircase, Elevator / Lift, Hallways / Corridors, Driveways and Walkways
- Practical considerations of Water supply, Electricity, Plumbing, and drainage facilities.

Unit-3 Ergonomics in Planning for family life space

- Ergonomics - Meaning and Significance, aspects of ergonomics
- Application of ergonomic principles in planning life space-Factors and practical consideration
- Designing Service Space – Kitchen, Planning for efficient Kitchen, Kitchen layout
- Planning for efficient work centers and storage areas in the kitchen, bathroom, laundry and other areas of the house.

Unit-4 Interior Decoration- Meaning and importance and development of good taste

- Element of design- Line, form, colour, texture and lighting.
- Types of design.
- Art principles –Harmony, Balance, Rhythm, Emphasis and proportions – Application of art principles and elements of design in improving the appearance of home.
- Principle for table setting

Unit-5 Furnishing and Accessories -Types and functions.

- Factors to be considered for selection and arrangement of furniture
- Interior and exterior fitting and fixture- type and importance

Unit-6 Flower arrangement – Shapes, Styles, techniques- Ikebana, Dry material, Bonsai,

- Points to be considered while selecting flowers and aids (containers, Holders, Mesh, Scissors, tape etc.,) for arranging flowers
- Dry flower arrangement-preserving flowers (both fresh and dry) by different method.

Unit-7 Household Equipment's

- Brief Study of Equipment in Indian House- Important electrical and non-electrical energy saving appliances- Refrigerator, Vacuum cleaner, washing machine, mixer and grinder, toaster
- Smokeless chullah and Biogas- importance, construction and principle
- Factors to be considered for choice and purchase of equipment's

Unit- 8 Care and Maintenance House

- Cleaning and care of metals and non-metals
- Eradication of household pests
- Prevention of accidents and safety measure in home

PRACTICALS

Unit 1. Housing

4. Learning to read House plan – Identification of Symbols
 - Site plan
 - Floor plan
 - Elevation
 - Perspective view
 - Land scape plan
5. Drawing house plan for different income groups
6. Drawing different types of Kitchen plan

Unit 2. Interior Decoration

7. Drawing Different design using Art Principle
8. Colour- Painting Prang Color chart
9. Principle of Table setting-Indian and western
10. Flower arrangement
11. Furniture arrangement
12. Preparation of Resource file

REFERENCE BOOKS

16. Julius Panero and Martin Zelink, (1979), Human Dimensions and Interior Space, 1st edition, Watson –Guptil Publications, Newyork, pp 23,131-163
17. M.N. Joglekar and Neelkamal Sharma, Housing Architectural Details, Hudco publication, New Delhi.
18. Art in Everyday Life - Harriet Goldstein Mac Millan Co. New York.
19. Colour Trends- Vol. I, Ethnic, Japanese, High- Tech Colors, AIM Creative Products Pvt. Ltd.
20. Colour- A guide to basic facts and concepts, John Wiley & Sons, New York.

Paper IX. TEXTILE CHEMISTRY & FASHION DESIGNING

Theory - 3lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-80 marks

Objectives

- 1.To give the basic knowledge of design and fashion.
2. To enable intelligent selection, use and care of textiles and garments in relation to the individual.
3. To know and appreciate traditional textiles of India.

Theory

Unit1. Dye and Dyeing – General principles, function

- Classification – Natural and synthetic - Methods of application -
- Natural Dyes - vegetable, animal, and mineral
- Synthetic- Direct, vat, mordant, acid, basic, disperse etc.
- Methods dyeing-Fiber, Yarn, Fabric, Garment

Unit 2. Printing- Type- hand and machine printing

- Styles of printing- Direct, Resist, Discharge printing
- Methods of Printing- Flat bed, Roller, Block, Discharge, Resist, Stencil, Bubble, Burn out, and Flocking

Unit 3. Fabric finishes

- Mechanical Finishes- Stentering, Calendaring- Embossing, Moire Effect, Sanforizing, Pressing,Decating, Napping, Flocking, Beetling and Softening
- Stiffening finishes- Starching, Weighting, flocking
- Cotton Finishes – Mercerizing, Parchmentization
- Wool finishes- Moth proofing, crabbing, Decantizing
- Synthetic Finishes- Delusturing,Antipilling, durable press etc.

Unit 4.Traditional Indian Textile

- Indian embroidery stitches
- Traditionally dyed, printed, woven and embroidered textiles present in various states of India
- Indian costume

Unit5. Design and fashion–

- Elements of fashion design
- Principles of design in textiles and clothing

Unit 6.Fashion merchandising- importance and steps

- Fashion- definition, and principle of Fashion
- Fashion cycle, factors affecting fashion

Unit 7. Clothing – functions,

- Factors involved in making selection-Fiber content, Yarn & fabric structure etc.
- Family Clothing&household linen - selection for men, women, college going and children, carpets and upholstery etc.
- Selection of Ready- made garments and their evaluation
- Basic and Special buying consideration
- Consumer buying- Budget, Advertising, Labels and Standards

Unit- 8 Fabric maintenance-

- Laundering process, Soaps and Detergents, bleaches, Fabric softeners, Dis-infecting and storage of clothes
- Guidelines for laundering – Drying, Dry cleaning, Pressing,
- Principles of laundry and dry cleaning
- Stain removal-Steps in removing stain

PRACTICALS

Unit 1. Basic Designing using elements of fashion design

- Construction of Blouse, Chudidar and Kameez
- Different types of designs- Floral, animals, geometrical & Human Motifs.
- Selection of appropriate design.
- Motif enlarging & reducing.
- Fabric painting

Unit 2. Hand stitches Samples -Functional, Traditional

- Knitting and applique work

Unit 3. Dyeing and printing

- Tie and dye and Batik
- Block printing

Unit 4. Evaluation of Ready-made garments

- Size labels
- Symbols and usage of care labels

Unit 5. Care and maintenance of different fiberfabrics- cotton, wool and silk

- Pre preparation, washing, bluing, stiffening.
- Mending and darning
- Stain removal

REFERENCES

1. Corbman P. B., (1989), Textiles- Fibre to Fabric, 6 edition, McGraw Hill, New York.
2. D'souza, N., (1998), Fabric Science, New Age International Pvt. Ltd., Delhi.
3. Darlie.O.Koshy (2008), Indian Design Edge, Lotus Collection, Delhi.
4. Ghosh, G.K., and Ghosh, Shukla (1995), Indian Textiles, APH Publishing Co., New Delhi
5. Marshall S G, Jackson H O, Stanley MS, KefgenM&Specht T, (2009), Individuality in Clothing & Personal Appearance, 6th Edition, Pearson Education, USA.
6. Sekhri S., (2011) Textbook of Fabric Science: Fundamentals to Finishing, PHI Learning, Delhi.

Paper XI. FAMILY, COMMUNITY & THERAPEUTIC NUTRITION

Theory - 3lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-80 marks

Learning objectives

1. To understand the importance of balanced diet, meal planning, community nutrition & medical nutrition therapy .
2. To learn the dietary management of various diseases.
3. To know about various national and international agencies working in the field of health and nutrition.

Theory

Unit 1. Balanced Diet- Balanced diet& nutritional requirements for diff age groups

- Energy requirement-Energy units, determination of energy by using Bomb Calorimeter,
- Basal Metabolism- Factors affecting BMR
- Recommended Dietary allowances (RDA)for Indian – Definition, Advantages
- Food exchange lists- Importance Types and Advantages of food exchanges

Unit 2. Meal planning – Importance,

- Principles of meal planning and points to be considered in planning diets
- Steps involved in planning diets.
- Meal planning for different age groups –infancy, preschool children, School going children, Adolescent boys and girls, adult and old age, Physiological conditions
- Maternal nutrition - Nutritional requirements Pregnancy and Lactating condition
- Factors affecting meal plans

Unit 3. Assessment of nutritional status of the community

- Purpose of nutritional assessment Malnutrition- under nutrition and over nutrition
- Methods of nutritional assessment -Direct -Anthropometry, Clinical, Biochemical
- Indirect- Diet surveys and health records

Unit 4. Community health & nutrition programmes

- ICDS-Supplementary feeding, Health and nutrition education, Prophylaxis programme, mid-day meal scheme etc.
- International organizations involved in Nutritional programme- FAO, WHO, UNICEF, CARE
- **Food Adulteration:** Types of adulterants used in different foods, harmful effects
- Prevention – Food Adulteration Act, Food standard- ISI, AGMARK,

Unit 6. Introduction to Medical Nutrition Therapy (MNT) – Definition, Type and Purpose and advantages

- Therapeutic Adaptation of Normal diets – Liquid and soft diet,
- Diet in nutritional deficiency – PEM, Anaemia, Vitamin Deficiency, Goitre
- Under weight- causes symptoms, Dietary management

- Over weight and obesity- causes symptoms, Dietary management

Unit 7. Dietary management during different diseases

- Fever – Type and MNT
- Gastro Intestinal disorders -Peptic ulcer, Diarrhea- dehydration and oral rehydration therapy,constipation – causes, complications, MNT
- Liver and Kidney Diseases - causes and dietary management
- CVD and Atherosclerosis - causes symptoms, Dietary management
- Diabetes- causes, Dietary management

Unit 8. Dietitian and other nutritional workers –

- Types and functions of dietitian
- Role of dietitian as a member of medical team
- Role of Nutritional workers

PRACTICALS

Unit 1. Preparation of Cooked Food Exchange Lists -Cereals, Pulses, Vegetables and fruits

Unit 2. Rich Sources of Nutrients -Listing out five rich sources each of various nutrients- Energy, Protein, Calcium, Iron, Vitamin A, B- complex and C

Unit 3. Nutritional assessment- Diet survey, Anthropometry survey and Blood Hb level

Unit 4. Evaluation of Nutritional Adequacy of Diet Consumed

- Nutritional Guidelines -24 hours Recall method,
- Preparation of diet plans and calculation of nutrient adequacy

Unit 5. Menu Plan- Diet for an Adult Man and Woman

- Diet for a Pregnant Woman and Lactating Mother
- Diet for a Pre School and School going Child

Unit 6. Planning of modified diets for therapeutic purpose

- Preparation of modified diets in terms of consistency- liquid and soft diet
- Foods to be included or excluded in different diseases

Unit 7. Therapeutic Modification of Diets

- Diet in fevers
- Diet in Gastro Intestinal Tract Disorders
- Diet in CVD
- Liver diseases- Jaundice
- Diet for weight Control

Unit 8. Visit to dietetic department of hospital

- Preparation of a resource file

References

1. Antia, P. (1986). Clinical dietetics and nutrition. Oxford univ. Bombay
2. Moris, E.S. (1994). Modern nutrition in health and disease. Leaned febigier, USA
3. Srilakshmi, B. (1995). Dietetics. Newage international publishers, New Delhi
4. Corinne H. Robinson, Marilyn R. Lawler, Wanda L. Chenoweth, Ann E. Garwick. (1982). Normal and Therapeutic Nutrition. (pp- 1-16). New York, Macmillan Publishing company.

Paper VII. SOCIOLOGY, MARRIAGE AND FAMILY RELATIONS

Theory - 4 lec / week

Theory- 100 marks

Objectives

1. To introduce students various aspects of marriage, family, gender issues.
2. To orient the students with the changing trends in family and parenting.
3. To introduce the concept of guidance and counseling.

Theory

Unit 1. Sociology- meaning, importance and scope-

- ❖ Relationship of sociology with home science;
- ❖ Understanding basic sociological concepts: society, community, association, institution
- ❖ Social groups; Social structure: Family, Caste, Class, Kinship

Unit 2 Social Institutions-Family, Marriage, Religion and educational institution

- ❖ Elements of social system
- ❖ Differences between tribal, rural and urban society

Unit 3. Culture-meaning, importance, cultural components-norms, customs, mores, folkways

- ❖ Prevailing problems of our society – Poverty, Illiteracy, Malnutrition, Beggary, Delinquency, Prostitution, Corruption and Communal Problem
- ❖ Social change: Meaning and Importance, Social Progress with special reference to women.

Unit 4. Marriage in Indian Society-Meaning and definition

- Goal and Function of marriage
 - Types of Marriage-Prevalent form of marriage in India
 - Readiness for marriage-Psychological, Social, Physiological, Economical
 - Preparation for marriage - (i) Selecting a suitable partner, (ii) Premarital association
- (iii) Premarital guidance and counseling

Unit 5. Marital Adjustment-Areas of adjustment within the family at different stages of family life cycle and occupational cycle.

- Marriage trends: contributory factors of marital discord, dysfunctional relationship and its consequences on child's psychosocial development.

Unit 6. Family - Meaning, Definition, Function and Structure of family

- Nuclear and joint families- Differential structure, roles, interaction and hierarchy of dominance in joint and nuclear families.
- Family trends: Single parent family, Childless family, Dual earner family, Live in relationships.

Unit 7. Preparation for Parenthood- Sex Education, Methods of Family Planning

- Population Control- consequences of uncontrolled population

- Parent Child Relationship-Parenting Style/ child rearing practices and disciplinary techniques.
- Parenting responsibilities- Physical, social, emotional, financial and legal responsibilities. Parents' contribution in fostering developmental needs of children such as learning, social, emotional and cognitive development.

Unit 8. Families at risk-(a) Marital disharmony (b) Separation (c) Violence and distress

- **Legal Aspects of Marriage-** (a) Hindu law of Marriage (b) Muslim Law of Marriage (c) Christian Law of Marriage.
- Legal Aspects of Women and child welfare
- **Marriage and Family Counseling-**Need and Importance
- Types, Procedures and Process of counseling
- **Status of women in the modern world** – Education, Employment, Economic Responsibilities and privileges

References:

1. Rice F.P. Marriage and Parenthood. Allyn and Bacon Inc. Toronto.
2. Rice F.P. 1983. Contemporary Marriage. Allyn and Bacon Inc. Toronto.
3. Reddy VNK, 1978. Marriages in India, The Academic Press Gurgaon.
4. Landis and Landis 1968. Building a Successful Marriage Prentice Hall Inc.
5. Duval I.M. 1962 Family Development J.P. Lippincott Co.
6. Winch R.F. 1963. The modern Family, Holt Rinehart and Winston.

Paper VIII. EARLY CHILDHOOD CARE AND EDUCATION

Theory - 3lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-30 marks

Objectives

3. To introduce the need and importance of early childhood education.
4. To understand the contribution of Western and Indian Philosophers to ECE.
5. To know about the requirement and activities of ECE to bring out all round development in children.

Theory

Unit 1. Early childhood period

- Meaning, Characteristics ,Significance of early childhood period
- **Early childhood education** -Concept of ECCE, Types and Need for ECE
- Brief History of ECE -Status of ECE during Pre and Post-Independence period
- Objectives of ECE Programme

Unit 2. Basic requirements of an ECE center

- Indoor and out- door space, Size of the class, Staff, Number of children, Teacher child ratio, Curriculum, Building facilities, Areas and equipment
- Records and reports maintained in ECE center

Unit 3. Contributions of Western Philosophers to Early Childhood Education in brief

- Jean Jacques Rousseau (1712 – 1798)
- Friedrich Wilhelm August Froebel (1782 – 1852)
- John Dewey (1859-1959)
- Maria Montessori (1870 – 1952)to ECCE:
- McMillan Sisters
- Pestalozzi

Unit 4. Contributions of Indian Philosophers to Early Childhood Education in brief

- Mahatma Gandhi
- Rabindranath Tagore (1861-1941)
- Sri Aurobindo (1872-1950)
- Jiddu Krishnamurthy
- TarabaiModak (1892 – 1973)

Unit 5. Curriculum Planning during early childhood period

- Types of Curriculum Planning- Long term, Short term, Weekly, and Daily
- Steps in curriculum planning
- Factors - Child related, Parent & Community related
- Characteristics of a good plan

Unit 6. Play- Purpose and functions

- Types of play activities and their values-
- Outdoor activities-Water Play, Sand Play, Gardening activities, Field trips
- Indoor activities -Block Play, Dramatic play, Creative activities
- Ways of fostering creativity -Easel painting Finger painting, Collage work, Dough & clay, Dance and Music

- **Cognitive activities-** Language activities, Rhymes, Stories, Puppet & Dramatic play

Unit 7.Types of ECCE centers in brief

- Nursery school
- Kindergarten school
- Montessori school
- School for disadvantaged -Head start, Balwadi, Anganwadi
- Creches

Unit 8.Qualities of an ECE teacher- Important characteristics

- Role of teacher in organizing activities
- Parental participation in ECE programme

PRACTICALS

Unit1. Observation and recording development of preschool children (3-6 years)

Unit2. Observational visit to Early Childhood Care and Development Centers

Unit3. Planning activities using thematic approach

- Physical and motor development
- Language development
- Intellectual development
- Socio emotional Development
- Creative activities
- Science experiences

Unit4. Preparation of Teaching Aids

Unit 5. Preparation of resource file

REFERENCES

- 1.Jagannath Mohanthy and Bhagyadhar Mohanthy, 2000,“ Early Childhood Care and Education”, Deep and Deep Publications PVT limited, New Delhi p-p.1-4.
- 2.J.S.Grewel, 1984, “ECE, foundations and Practice”, National Psychological Corporation, Agra, New Delhi, p-p 19-30.
- 3.Claudia Eliason& Loa Jenkins, 1990, “A practical guide to early child curriculum” 4th edition, Merrill Publishing Company, London. P-p 3 –8.

Paper X. RESOURCE MANAGEMENT& ENTREPRENEURSHIP

Theory - 3lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-80 marks

Objectives

1. To understand the fundamentals of resource management in a changing scenario.
2. To inculcate skills in identifying,creating, selecting and using available resources judiciously with emphasis on maximization and conservation.
3. To understand the scientific application of the process of management in the judicious use of resources.
4. To orient the students to the concept, need and process of entrepreneurship.

Theory

Unit 1. Introduction to Resource Management

- Concept, scope and significance of management
- Management Process- its importance
- Characteristics of good manager
- **Approaches to Family Resource management** -Meaning and importance, types, and interrelationship between Value,Goals and Standard
- Resources -Meaning, Classification, Importance and Characteristics
- Factors affecting management of resources.

Unit 2. Decision Making – importance, types, steps, method of resolving conflicts

- Planning – nature, characteristics, importance
- Organizing; Coordinating, Supervising, directing and guiding;
- Controlling characteristics for effective control
- Evaluation – meaning, importance and methods

Unit 3. Application of Management Process in:

- Time - significance, time norms, peak loads
- Energy – work curves, work units
- Work simplification techniques
- Mundel's classes of change
- Fatigue – meaning, types and methods of avoiding fatigue

Unit 4. Family Income& Expenditure - source and types

- Budget- items, steps
- Budget for different income group
- Types of household consumption and Engels law of consumption
- Financial records in money management

Unit 5.Consumer Economics

- Purchasing Method- Cash, Credit, Whole-Sale and Retail
- Consumer cooperative

- Consumer problems
- Consumer Protection Act- Objectives and Provisions.

Unit 6. Entrepreneurship -Meaning, Benefits

- Process of entrepreneurship development
- Entrepreneurial Development Cycle Components
 - Stimulatory activities
 - Supporting activities
 - Sustaining activities
- Characteristics of good entrepreneur

Unit 7. Setting up an Enterprise

- Enterprise selection
- Market analysis
- SWOT analysis
- Resource mobilization-finance, technology, raw materials, site, man power

Unit.8 Marketing Strategies-

- Identification of different marketing strategy
- Packaging
- Quality control
- Advertisement
- Costing and Taxation

PRACTICAL

1. Resource conservation and optimization/green technologies (natural resources)
2. Identification and development of self as a resource.
 - SWOT analysis-Who am I and Micro lab
 - Building Decision Making abilities through management games
3. Preparation of time plans for self and family
4. Preparation of Family Budget
5. Time and Motion Study
 - Managerial process
 - Resource optimization - time, money, products, space, human capital
6. Preparation of a project proposal

Reference

1. Koontz.H.and O'Donnel C., 2005, Management – A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company
2. Kreitner. 2009, Management Theory and Applications, Cengage Learning: India
3. Nickell, P., & Dorsey, J.M., Management in family living (4th Edition). New York NY: Wiley.

4.Rao V.S. andNarayana P.S., Principles and Practices of Management, 2007, Konark Publishers Pvt. Ltd. Stoner J., 2008, Management.PHI Learning.

Paper XII. HOME SCIENCE EXTENSION & COMMUNICATION

Theory - 3lec / week
Practical - 3 hrs/week

Theory- 100 marks
Practical-30 marks

Objectives:

3. To understand the concept of extension and communication its relevance for self & national development.
4. To know the role of Home Science extension in community development.
5. To sensitize students towards various methods, preparation and selection of suitable materials for effective communication.

Theory

Unit 1.Extension- Concept, Principles and Philosophy of extension

- Objectives and scope of extension
- Extension Education process
- Role and Qualities of extension workers
- Home Science Extension as a discipline and its contribution towards development.

Unit 2.Communication -Concept, Scope,

- Principlesand importance of communication in Extension work
- Communication barriers and ways to overcome
- Adoption- importance, stages of Adoptionprocess- factors affecting Adoption
- Diffusion- concept, elements and role of Extension worker
- Leadership- Meaning, qualities and roles

Unit 3.Rural Development

- Concept of strategy of rural development
- Rural Development Programmes in India – Integrated child development services
- (ICDS), DRDA- IRDP&TRYSEM, DWACRA, JRY etc.
- Role of voluntary organizations and NGO's in rural development.

Unit 4.Community Development

- Principles and philosophy of Community Development
- Panchyati Raj and Democratic Decentralization
- Functions, structure and three-tier system of administration

Unit 5.Extension Teaching Methods

- Concept and steps in extension teaching
- Classification of methods according to form and use
- Description, advantages and limitations of different extension teaching methods
- Factors affecting selection and use of extension teaching methods

Unit 6.Audio- Visual Aids

- Classification of Audio-visual aids
- Principle of preparation
- Scope, advantages and limitations of various audio visual aids
- Selection and use of teaching aids

Unit 7. Programme Planning

- Importance, objectives and Principle
- Participatory Rural Appraisal- Concept, Importance and Techniques
- Programme development process and execution – methods to finding out the felt and unfelt need ,

Unit 8. Monitoring & Evaluation

- Monitoring- concept, meaning, importance and methods
- Evaluation- concept, importance,
- Principle and methods of evaluating individual/Group performance

PRACTICALS

1. Preparation of Teaching aids- visuals, exhibit and non-projected audio-visual
2. Survey in a village/community to find out need and interests of the people and resource available- human and non- human
3. Group Discussion on identified needs of the village and Planning programme
4. Plan two lessons for the women of the community surveyed as per their need & interest
 - Lecture cum Demonstration of recipe
 - Workshop- teach a craft
5. Preparation of Programme proposal
6. Execute the lessons in the community and evaluate performance
7. Visit to self-help groups
8. Preparation of Resource file on different Extension programme

REFERENCES

1. Dhama, O.P. Bhatnagar, O.P., Second Edition 1985, Education and Communication for Development, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Dubey V.K. and Bishnoi Indira, First Edition 2008, Extension Education & Communication, New Age International Publishers, New Delhi. Pg.
3. Supe S.V., Second Edition 1997, An Introduction to Extension Education, Oxford and IBH Publishing Co. Pvt. Ltd, New Delhi.
4. Ray G.L., Seventh Edition, 2008, Extension Communication and management, Kalyani Publishers, New Delhi. Pg. 1-34, 98-164, -338-348.
5. Desai Vasant, First Edition 1991, Fundamentals of Rural Development, Himalaya Publishing Henge. Pg. 1.1-1.27, 4.1-4.66, 14.1-14.32, 15.1-15.29, 16.1-16.30
6. Oakley P. and Garforth C. FAO, 1985, Guide to Extension Training. Pg. 1-20, 41-101.

7. Singh K. Uttam, Nayak A.K., Commonwealth Publishers, 2005, Extension Education.

BIOTECHNOLOGY

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

(w. e. f. 2015-2016)

DEPARTMENT OF BIOTECHNOLOGY

FIRST YEAR - FIRST SEMESTER SYLLABUS

Paper I - Biomolecules, Cell Biology & Enzymology

Module I : Cell Biology

20Hours

- 1.1. Prokaryotic & Eukaryotic cell- Structure and Components.
- 1.2. Chromosomal Size and shape, Euchromatin, Hetero Chromatin.
- 1.3. Specialized chromosomes (Polytene and Lamp Brush).
- 1.4. Extra chromosomal DNA- Plasmids and Organelle DNA.
- 1.4. Gene, Genome Organization in Prokaryotes and Eukaryotes.
- 1.5. Cell Cycle and its significance.
- 1.6. Cell Division – Mitosis & Meiosis and its significance.

Module II : Carbohydrates and Lipids

20Hours

- 1.1. Carbohydrates- Classification.
- 1.2. Monosaccharides, Disaccharides – Structure and properties.
- 1.3. Polysaccharides - Storage polysaccharide (Starch and glycogen).
- 1.4. Polysaccharides - Structural polysaccharides (cellulose and chitin).
- 1.5. Outline Classification of Lipids- Fatty acids: saturated and unsaturated.
- 1.6. Structure and function of :
 - a) Triacylglycerols b) phosphoglycerols c) Sphingolipids d) Sterols (Cholesterol).

Module III : Proteins and Enzymes

20Hours

- 2.1. Amino acids - Classification, structure and properties.
- 2.2. Primary, secondary, tertiary and quaternary structures of proteins.
- 2.3. Classification and nomenclature of enzymes.
- 2.4. Factors affecting enzyme activity.

2.5.Enzyme kinetics(Brief Study)- Michaelis Menten equation & Line Weaver Burk plot.

2.6.Enzyme inhibition- Irreversible & Reversible.

Recommended Books:

- 1.Biochemistry - By Dr. U. Satyanarayana, U. Chakrapani
2. Biochemistry - By J.L. Jain
3. Biochemistry - By Conn and Stumpf
4. Biochemistry - By Lehninger
5. Textbook of Medical Biochemistry - By S. Ramakrishnan, R. Rajan, and K.G. Prasannan (Orient Longman)
6. Biochemistry - By Stryer
7. Biochemistry - By Voet and Voet
8. Biochemistry (Jaypee) - By Vasudevan
9. Biochemistry - By David Rawn
10. General Biochemistry - By J.H. Well
11. Biochemistry - By K. Trehan
12. Biochemical Methods - By S. Sadasivam and A. Manickam
13. An introduction to Practical Biochemistry - By T. Plummer
13. Experimental Biochemistry - A Student Companion - By V. Deshpande and B. Sasidhar Rao
14. Practical Biochemistry – By Upadhayay, Wilson and Wilson, Wilson & Walker
15. Biochemistry – Viva Series
16. Cell and Molecular Biology - By De Robertis
17. Cell and Molecular Biology - By Lodish
18. Cell Biology and Genetics - By P.K. Gupta
19. Biotechnology - By K. Trehan
20. Biotechnology –1 - By R.S. Setty and G.R. Veena
21. Biotechnology – II - By R.S. Setty and V. Sreekrishna
22. Cell Biology - By S.C. Rastogi (New Age International (P) Ltd)

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DEPARTMENT OF BIOTECHNOLOGY

FIRST YEAR - SECOND SEMESTER SYLLABUS

Paper II – Microbiology and Genetics

Module-I : Microbiology

20 ours

- 1.1 .History and Development of Microbiology : Contributions of Louis Pasteur, Robert Koch and Edward Jenner
- 1.2.Outline classification of living organisms- Haeckal, Whittaker & Carl-Woese Systems.
- 1.3.Isolation ,Identification and preservation of pure cultures of bacteria.
- 1.4.Methods of preservation of microbial cultures for industrial application.
- 1.5 Methods of sterilization- Physical and Chemical methods.
- 1.6.Microbial Growth Curve.
- 1.7.Disease causing pathogens and their symptoms(HIV,Typhoid &Bird flu)

Module -II : Classical Genetics

20 Hours

- 2.1.Mendel's experiments – Factors contributing to success of Mendel's experiments
- 2.2. Mendel's Laws-Laws of Segregation, Purity of gametes & Independent assortment.
- 2.3.Deviations of Mendel's Laws- Partial or Incomplete dominance &Co-dominance.
- 2.5. Types of Epistatic gene interactions: Dominant and Recessive epistasis
- 2.6. Multiple alleles – Blood groups in man: ABO and Rh.

Module -III : Linkage- Recombination and Sex determination

20 Hours

- 3.1. Linkage, recombination and crossing over
- 3.2. Cytological proof of crossing over.
- 3.3. Recombination frequency and map distance.
- 3.4. Mechanism of Sex determination in Eukaryotes.
- 3.5. Genic balance theory – *Drosophila*.

3.6. Sex Linked inheritance.

Books Recommended:

1. Microbiology by M.J. Pelzar, E.S.N. Cfan and N.R. Kreig, McGraw Hill Publ.
2. Introductory Microbiology by J. Heritage, E.G.V. Erans, R.A. Killington, Cambridge University Press.
3. General Microbiology by H.G. Schlegel Cambridge University Press.
4. General Microbiology by Stanier, R.Y, J.L. Ingrahm, M.L. Wheelis & P.R. Painter
5. Microbiology – concepts and Application. John Wiley and Sons, New York, 1988.
6. Genetics - By Gardner (Macmillan Press)
7. An introduction to Genetic Analysis - By Griffith and others – Freeman and Company
8. Fundamentals of Genetics – By B.D. Singh, N. Pratibha, P.H. Rao and P.B. Kavi Kishor
9. Genetics- By B.D. Singh
10. Genetics - By Mohan P. Arora, Gurdarshan and S. Sandhu
11. Theory and Problems in Genetics - By Stransfield

ANNEXURE – III

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
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FIRST YEAR BIOTECHNOLOGY

(w.e.f. 2015-2016)

PRACTICAL PAPER – I

Practical Paper

1. Preparation of Molar , Molal and Normal solutions.
2. Preparation of buffers (Acidic, Alkaline and Neutral buffers)
3. Qualitative analysis of sugars.
4. Qualitative analysis of amino acids.
5. Qualitative analysis of lipids.
6. Enzyme assay- Alkaline phosphatase.
7. Estimation of proteins by biuret method.
8. Monohybrid and dihybrid ratio in Drosophila or Maize(models\Problems).
9. Identification of phases of mitosis in onion root tips.
10. Preparation of microbiological media.
11. Isolation of bacteria and fungi.
12. Staining techniques- simple and grams staining.
13. Preservation and maintenance of microbial cultures.
14. Isolation of enzyme and determination of its specific activity.

Biochemistry

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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CHOICE BASED CREDIT SYSTEM

FIRST YEAR B.Sc. BIOCHEMISTRY

FIRST SEMESTER

(w.e.f. 2015-2016)

Unit I: Cell biology

Prokaryotic and eukaryotic cell (animal and plant cells), structure of nuclear envelope, nuclear pore complex. ER structure. Organization of Golgi. Lysosome. Structure and functions of mitochondria, chloroplasts and peroxisomes. Biomembranes.

Unit II : Water

Water as a biological solvent and its role in biological processes. pH, Buffers, Henderson-Hasselbach equation.

Unit III: Carbohydrates

Carbohydrates: Classification, monosaccharide's, D and L designation, open chain and cyclic structures, epimers and anomers, mutarotation, reactions of carbohydrates Amino sugars, Glycosides. Structure and biological importance of disaccharides (sucrose, lactose, maltose, isomaltose, trehalose), trisaccharides (raffinose, melezitose), structural polysaccharides (cellulose, chitin, pectin) and storage polysaccharides (starch, inulin, glycogen). Glycosaminoglycans, Bacterial cell wall polysaccharides. Outlines of glycoproteins, glycolipids and blood group substances.

Unit IV: Lipids:

Classification, saturated and unsaturated fatty acids, structure and properties of fats and oils (acid, saponification and iodine values, rancidity). General properties and structures of phospholipids, sphingolipids and cholesterol. Prostaglandins- structure and Functions. Lipoproteins: Types and functions

Unit-V : Amino Acids, Peptides

Amino Acids: Classification, structure, stereochemistry, chemical reactions of amino acids due to carbonyl and amino groups. Titration curve of glycine and pK values.

Essential and non-essential amino acids, non-protein amino acids. Peptide bond - nature and conformation. Naturally occurring peptides ñ glutathione, enkephalin.

Unit-VI: Proteins

Proteins: Classification based on solubility, shape and function. Determination of amino acid composition of proteins. General properties of proteins, denaturation and renaturation of

proteins. Structural organization of proteins- primary, secondary, tertiary and quaternary structures (Eg. Hemoglobin and Myoglobin), forces stabilizing the structure of protein.

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CHOICE BASED CREDIT SYSTEM
FIRST YEAR B.Sc. BIOCHEMISTRY
SECOND SEMESTER

Unit-I : Nucleic Acids

Nature of nucleic acids. Structure of purines and pyrimidines, nucleosides, nucleotides. Stability and formation of phosphodiester linkages. Structure of Nucleic acids- Watson- Crick DNA double helix structure, introduction to circular DNA, super coiling, helix to random coil transition, denaturation of nucleic acids- hyperchromic effect, T_m -values. Types of RNA and DNA.

Unit-II: Porphyrins :

Prophyrins: Structure, properties and functions of heme, chlorophylls and cytochromes.

Unit-III : Introduction to Enzymes and Enzyme Catalysis

Introduction to biocatalysis, differences between chemical and biological catalysis. Nomenclature and classification of enzymes. Enzyme specificity. Active site. Principles of energy of activation, transition state. Interaction between enzyme and substrate- lock and key, induced fit models. Definition of holo-enzyme, apo-enzyme, coenzyme, cofactor.

Unit-IV : Enzyme Kinetics

Factors affecting the catalysis- substrate concentration, pH, temperature. Michaelis - Menten equation for uni-substrate reaction (derivation not necessary), significance of K_M and V_{max} . Enzyme inhibition- irreversible and reversible, types of reversible inhibitions competitive and non-competitive.

Unit-V : Regulation of enzymes:

Regulation of enzyme activity- allosterism and cooperativity, ATCase as an allosteric enzyme, covalent modulation- covalent phosphorylation of phosphorylase, zymogen activation- activation of trypsinogen and chymotrypsinogen. Isoenzymes (LDH)

Unit-VI : Applications of Enzymes:

Industrial applications, Clinical applications and Immobilized Enzymes.

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CHOICE BASED CREDIT SYSTEM

FIRST YEAR B.Sc. BIOCHEMISTRY

LIST OF PRACTICALS

1stYear Practical's Paper-I: Qualitative Analysis and Enzymology 90 hrs

(3 hrs/week)

Introduction to Good Laboratory Practice (GLP). Principles of Laboratory Hygiene and Safety.

List of experiments:

1. Preparation of buffers (acidic, neutral and alkaline) and determination of pH .
2. Qualitative identification of carbohydrates- glucose, fructose, ribose/xylose, maltose, sucrose, lactose, starch/glycogen.
3. Qualitative identification of amino acids ñ histidine, tyrosine, tryptophan, cysteine, arginine.
4. Qualitative identification of lipids- solubility, saponification, acrolein test, Salkowski test, Lieberman-Burchard test.
5. Titration curve of glycine and determination of pK and pI values.
6. Determination of Molar Extinction Coefficient of biomolecules.
7. Absorption maxima of colored substances- p -Nitrophenol, Methyl orange.
8. Absorption spectra of protein-BSA, nucleic acids- Calf thymus DNA.
9. Assay of amylase
10. Assay of urease
11. Determination of optimum temperature for amylase.
12. Determination of optimum pH for phosphatase.

MATHEMATICS

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CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)

FIRST YEAR B.Sc. MATHEMATICS

FIRST SEMESTER

CORE COURSE-I: Ordinary and Partial Differential Equations

(w. e. f. 2015-2016)

UNIT - I:

25hrs

Differential equations of the first order the first degree: Linear differential equations; Differential equations reducible to linear form; Exact differential equations; Integrating factors; Change of variables; Orthogonal Trajectories.

Differential equations of the first order but not of the first degree: Equations solvable for p ; Equations solvable for y ; Equations solvable for x ; Equations that do not contain x (or y); Equations of the first degree in x and y , Clairaut's Equation.

UNIT -II :

20hrs

Higher order linear differential equations: Solution of homogeneous linear differential equations of order n with constant coefficients; Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators.

UNIT -III :

15hrs

Higher order linear differential equations Method of variation of parameters; Linear differential equations with non-constant coefficients; The Cauchy-Euler equation, Legendre's equations.

Partial differential equations-i: Formation of partial differential equations- Equations of first order — Lagrange's Linear Equation

Prescribed Text book: Relevant portions as in 1. A text book of B.Sc. Mathematics Volume-I by V.Venkateswara Rao, N.Krishnamurthy, BVSS Sarma, S.Anjaneya Sastry, Revised edition 2014.

2 M.D Rai Singhania, "Ordinary and Partial Differential Equations", S.Chand & Company, New Delhi. (Sections from 1.1 to 1.10 of chapter 1 and 2.1 to 2.12 of chapter 2)

Reference Book:

1. P.K. Jain and Khaleel Ahmed, "A Text Book of Analytical Geometry of Three Dimensions", Wiley Eastern Ltd., 1999.
2. Differential Equations with applications and programs- S. Balachandra Rao & HR anuradha

University Press

3. Differential Equations and Their Applications by Zafar Ahsan, published by Prentice-Hall of India Pvt. Ltd. New Delhi-Second edition:
4. I.N.Sneddon: An Introduction to partial differential equations (Mc Graw Hill-2000)

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)
FIRST YEAR B.Sc. MATHEMATICS
SECOND SEMESTER
CORE COURSE-II: SOLID GEOMETRY
(w. e. f. 2015-2016)

Unit — I :

25hrs

The Plane: Equation of plane in terms of its intercepts on the axis, Equations of the plane through the given points. Length of the perpendicular from a given point to a given plane, Bisectors of angles between two planes, Combined equation of two planes, Orthogonal projection on a plane.

The Line: Equations of a line; Angle between a line and a plane; The condition that a given line may lie in a given plane; The condition that two given lines are coplanar; Number of arbitrary constants in the equations of a straight line; Sets of conditions which determine a line; The shortest distance between two lines; The length and -equations of the line of shortest distance between two straight lines; Length of the perpendicular- from a given point to a given line.

Unit — II:

20 hrs

Sphere: Definition and equation of the sphere; Equation of the sphere through four given points; Plane sections of a sphere; Intersection of two spheres; Equation of a circle; Sphere through a given circle; Intersection of a sphere and a line; Power of a point;- Tangent plane; Plane of contact; Polar plane; Pole of a plane; Conjugate points; Conjugate planes; Angle of intersection of two spheres; Conditions for two spheres to be orthogonal; Radical plane; Coaxial system of spheres; Simplified form of the equation of two spheres.

Unit — III :

15hrs

Cone: Definitions of a cone; vertex; guiding curve; generators; Quadratic cones with vertex at the origin; Equations of cones with vertex at origin are homogenous; Cone and plane through its vertex, Cone with a base curve; Enveloping cone of a sphere; Right circular cone; Condition that the general equation of the second degree should represent a cone; Condition for the cone to have three mutually perpendicular generators.

Cylinder: Definition of a cylinder, elliptic cylinder, hyperbolic cylinder, parabolic cylinder, cylinder with base guiding curve, Equation of a cylinder.

(Note: Sections 13.1 to 13.14 of chapter 13, Sections 14.1 to 14.7 of chapter 14)

Prescribed Text book: Relevant portions of A text book of B.Sc. Mathematics Volume-I by V.VenkateswaraRao, N.Krishnamurthy, BVSS Sarma, S.Anjaneya Sastry, published by S. Chand & company Ltd. (Revised edition 2014).

Reference Books:

1. Analytical Solid Geometry by Shanti Narayan and P.K.Jain Published by S.Chand & Company Ltd. Seventeenth edition

2. P.K. Jain and Khaleel Ahmed, "A Text Book of Analytical Geometry of Three Dimensions", Wiley Eastern Ltd., 1999.

Computer Science

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)

FIRST YEAR B.Sc. COMPUTER SCIENCE

FIRST SEMESTER

Paper I: Computer Fundamentals and Ms Office

No. of hours per week: 04

Max Marks:75

Unit – 1: Fundamentals of Computers

Computer definition – Types of Computer – Logical Organization of a Digital Computer – Memory: Main Memory: RAM, ROM and Cache – Secondary Memory: Magnetic type, Floppy disk, Hard disk, Compact disk – Input devices – Output devices

Unit - 2: Operating System and Windows Operating system: Definition, functions of an operating system, Types of Operating systems: Brief details of batch processing, Multi Programming, multi tasking, time sharing, real time operating systems - Introduction to DOS, DOS internal commands, DOS External Commands – Introduction to Windows, Desktop, File, Folder, My Computer, My documents, Recycle bin, Internet Explorer, Windows Explorer – Types of Programming Languages.

Unit - 3: MS Word : Ms-Word features – Creating header and footer – formatting - creating tables – Using clipart inserting an image – Macro: Definition – Advantages – Creating, Editing, Deleting and Running a Macro – Creating a Mail Merge document.

Unit – 4 - MS Power Point : Features of MS PowerPoint – Parts of MS PowerPoint window - Creating presentations through Auto Content Wizard, Templates and Blank – Inserting and deleting slides – Slide views – Custom Animation and Transition effects.

Unit – 5 : MS-Excel: Excel features – Introduction to excel functions: (Statistical, Mathematical, Date and Time and String functions) – Creating a charts (Bar, Pie, column) – Formulas – References– Sorting – Filtering – Validation – Pivot tables.

Unit – 6 : MS-Access: Access features - Creating Tables – Creating Forms – Designing Queries – Sorting - Generating reports.

Text Books:

1. Peter Norton, Introduction to Computers, Sixth edition, Tata Mc. Graw Hill (2007).
2. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill (2008)
3. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill (2008).
4. Suresh K. Basandra : Computers Today, Galgotia.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
CHOICE BASED CREDIT SYSTEM (w.e.f. 2015-16)
FIRST YEAR - B.Sc. COMPUTER SCIENCE
SECOND SEMESTER
PAPER -I: Programming in C

No. of hours per week : 04

Max Marks :75

Unit - 1 : C Language fundamentals

Introduction – ‘C’ Fundamentals : Programming – High Level Languages – compiling programs – Integrated Development Environments – Language Interpreters – Compiling your first program – Running your program – understanding your first program – comments – variables, Data types, and Arithmetic Expressions : working with variables – Understanding Data types and constants – working with Arithmetic Expressions – The Assignment operators – The printf function – The scanf() function.

Unit - 2: Control Structures and Arrays

Decision making : The if statement – the if else construct – Nested if statements – The else if construct – The switch statement – Boolean variables – The conditional operator – program looping : The for statement – Relational operators – Nested for loops – The while statement – The do statement – The break statement – The continue statement. – working with Arrays : Defining an array – Initializing Arrays – character Arrays – The const Qualifier – Multidimensional arrays- variable length Arrays.

Unit - 3 : Functions : Working with Functions : Defining a Function-Arguments and Local variables – Returning Function Results – Function calling – Declaring Return Types and Argument types – Top Down programming – Functions and Arrays – Global variables – Automatic and static variables – Recursive Functions.

Unit – 4 Structures : Working with structures : Defining structure – Functions and structures – Initializing structures – Array of structures- structures containing structures – structures containing Arrays – Structure variants – Character strings : Array of characters – variable length character strings – Escape characters – character strings, structures and arrays - character operations.

Unit – 5 - Pointers : Defining a pointer variable – using pointers in Expressions – pointers and structures (Exclude Linked List) – Pointers and Functions – pointers and Arrays – operations on pointers – pointers and Memory address.

Unit - 6 : Preprocessor Directives and Files : The preprocessor : The # define statement – The # # operator – The #include statement – conditional compilation. More on Data Types : Enumerated Data Types – The typedef statement – Data Type conversions - Input and Output Operations in “C” : Character I/O – formatted I/O – Input and Output Operations with Files – Special functions for working with Files.

Text Books:

1. Stephen G. Kochan, Programming in C, Pearson Education.
2. Programming in C by Balagurusamy, Tata Mc Graw Hill

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL

For all I B.A./B.Sc./B.Com. programs with no computer course as core subject

(Revised syllabus W.E.F.2015- 2016)

PAPER –I: INTRODUCTION TO COMPUTERS.

SEMESTER – I SYLLABUS

Unit-1 : Exploring Computers

Exploring Computers and their uses: Overview: Computers in our world, The computer defined, Computers for individual users, Computers for organizations, Computers in society, Why are computers so important. Looking inside the computer system:

Unit-2 : Peripheral devices and hardware

Overview: Detecting the ultimate machine, The parts of a computer system, The information processing cycle, Essential computer hardware: processing devices, memory devices, Input and output devices, Storage devices, System software, Application software, Computer data, Computer users. Using the keyboard and mouse:

Overview: The keyboard and mouse, The keyboard, How the computer accepts input from the keyboard, The mouse, Variants of the mouse, Ergonomics and input devices.

Inputting data in other ways: Overview: Options for every need and preference, Devices for hand, optical input devices, Audio visual input devices.

Printing : Overview: putting digital content in your hands, Commonly used printers, High-quality printers, Thermal-wax printers, Dye-sublimation printers, Plotters.

Unit-3 : Storage Devices and Operating System Basics

Transforming data into information: Overview: The difference between data and information, How computers represent data, How computers process data, Machine cycles, Memory, Factors effecting processing speed, The computer's internal clock, The Bus, Cache memory. Types of storage devices: Overview: An ever-growing need, Categorizing storage devices, Magnetic storage devices—How data is stored on a disk, How data is organized on a magnetic disk, How the operating system finds data on a disk, Diskettes, hard disks, Removable high-capacity magnetic disks, Tape drivers, Optical storage devices, Solid-state storage devices, Smart cards, Solid-state disks.

Unit-4 : Operating system basics

Overview: The purpose of operating systems, Types of operating systems, Providing a user interface, Running programs, Managing hardware, Enhancing an OS utility software. Networking Basics: Overview: Sharing data anywhere, anytime, The uses of a network, Common types of networks, Hybrid networks, How networks are structured, Network topologies and protocols, Network media, Network hardware.

Prescribed Books :

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007) (Chapters 1, 2, 3, 4, 5, 6,7,10,11,12)
2. Ran Mansfield, working in Microsoft Office, Tata McGraw Hill 2008). (Chapters : 4 to 9, 11, 12, 24, 25, 28)

Reference Books :

1. Michael Miller, Absolute Beginner's guide to computer Basics, Fourth Edition, Pearson Education (2007).
2. Deborah Morley, Charles S.Parker, understanding computers today and tomorrow, 11th edition, Thomson(2007).
3. Ed Bott, woody Leonhard, using Microsoft Office 2007, Pearson Education (2007).

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL

For all I B.A./B.Sc./B.Com. programs with no computer course as core subject

(Revised syllabus W.E.F.2015- 2016)

PAPER –I: INTRODUCTION TO COMPUTERS.

SEMESTER – II SYLLABUS

Unit-1 : MS-Word

Word Basics : Starting word, Creating a new document, Opening preexisting document, The parts of a word window, Typing text, Selecting text, Deleting text, Undo, Redo, Repeat, Inserting text, Replacing text, Formatting text, Cut , Copy, Paste – Formatting Text and Documents : Auto format, Line spacing, Margins, Borders and Shading. Headers and Footers : Definition of headers and footers, creating basic headers and footers, creating different headers and footers for odd and even pages.

Unit-2 : Tables

Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, Deleting columns, changing column width. Graphics : Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing.

Unit-3: Templates

Template types, using templates, exploring templates, modifying templates.

Macros : Macro, Record in macros, editing macros, running a macro.

Mail Merge : Mail Merge concept, Main document, data sources, merging data source and main document, Overview of word menu options word basic tool bar.

Unit-4: Ms-Power Point

Power Point : Basics, Terminology, Getting started, Views

Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements.

Prescribed Books :

1. Peter Norton, Introduction to Computers, sixth Edition, Tata McGraw Hill (2007) (Chapters 1,2,3,4,5,6,7,10,11,12)
2. Ran Mansfield, working in Microsoft Office, Tata McGraw Hill (2008). (Chapters : 4 to 9, 11, 12, 24, 25, 28)

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3. Ed Bott, woody Leonhard, using Microsoft Office 2007, Pearson Education (2007).

LIST OF PRACTICALS

KVR GOVT. COLLEGE (AUTONOMOUS): : KURNOOL I B.Sc COMPUTER SCIENCE NEW SYLLABUS (Revised syllabus W.E.F.2015- 2016)

PAPER –I: Computer Fundamentals and Office Automation

PRACTICAL PAPER: Office Automation & C Programming

MS-WORD

1. Design a visiting card for Managing Director of a Company with following specification
 - i. Size of visiting card is 3.5” x 2”
 - ii. Name of a company with big font using Water Mark
 - iii. Phone number, fax number and e-mail address with appropriate symbols
 - iv. Office and residence address separated by line.
2. Create a letter head of a company
 - i. Name of Company on the top of the page with big font and good style
 - ii. Phone numbers, fax numbers, e-mail address with appropriate symbols
 - iii. Main products manufactured to be described at the bottom
 - iv. Slogans if any should be specified in bold at the bottom
3. Creation of your Bio-Data: consisting Name, email-id, Contact Address, Carrier Objective, Educational qualifications, social activities, achievements.

MS-POWERPOINT

1. Make a Power point presentation on your strengths, weaknesses, hobbies, factors that waste your time.
2. Make a Power point presentation on any Current affair (Not less than 8 slides)
3. Make a Power point presentation to represent your College profile.
4. Make a Power point presentation of all the details of the books that you had studied in B.Sc. First Year.

MS-ACCESS

1. Create a database using MS-ACCESS with at least 5 records
TABLE1 STRUCTURE:
REGISTER NUMBER, NAME, DOB, GENDER, CLASS
TABLE2 STRUCTURE:
REGISTER NUMBER, M1, M2, M3, M4, M5, TOTAL
Maintain the relationship between two tables with REGISTER NUMBER as a Primary Key and answer the following queries:
Show the list of students with the following fields as one query
REGISTER NUMBER NAME GENDER TOTALMARKS
2. Maintain the relationship between above two tables with REGISTER NUMBER as a Primary Key and answer the following reports:
Reports must have following columns
Report1 with REGISTER NUMBER, NAME, MARKS OF ALL SUBJECTS and TOTAL
Report2 with REGISTER NUMBER, TOTAL, PERCENTAGE.

3. Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE:

EMP-CODE, EMP-NAME, AGE, GENDER, DOB

TABLE2 STRUCTURE:

EMP-CODE, BASIC-PAY

Maintain the relationship between two tables with EMP-CODE as a Primary Key and generate the following reports:

REPORT1:

EMP-CODE, EMP-NAME, BASIC-PAY, DA, HRA, GROSS-SALARY.

REPORT2:

EMP-CODE, EMP-NAME, AGE, GENDER, GROSS-SALARY.

MS-EXCEL

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice versa.

Decimal Numbers: 35,68,95,165,225,355,375,465

Binary Numbers: 101,1101,111011,10001,110011001,111011111.

2. The ABC Company shows the sales of different products for 5 years. Create column chart, 3D-column and Bar chart for the following data

YEAR PRODUCT-1 PRODUCT-2 PRODUCT-3 PRODUCT-4

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
2010	1000	800	900	1000
2011	800	80	500	900
2012	1200	190	400	800
2013	400	200	300	1000
2014	1800	400	400	1200

3. Create a suitable examination data base and find the sum of the marks(total) of each student and respective class secured by the student rules:

Pass if marks in each subject ≥ 35

Distinction if average ≥ 75

First class if average ≥ 60 but < 75

Second class if average ≥ 50 but < 60

Third class if average ≥ 35 but < 50

Fail if marks in any subject is < 35

Display average marks of the class, subject wise and pass percentage.

PRACTICAL PAPER : C-PROGRAMMING LAB CYCLE

1. Program for

i. Sum of factors of a number

ii. Sum of digits of a number

2. Program to check whether a given number is

i. Prime number or not

ii. Perfect number or not

- iii. Armstrong number or not
- 3. Program using recursion for
 - i. Factorial of a given number
 - ii. Fibonacci series
- 4. Program for roots of a quadratic equation
- 5. Program using functions
 - i. Without return value
 - ii. With return value
 - iii. With parameters
 - iv. Without parameters
- 6. Program to find largest/smallest of n numbers by using arrays
- 7. Program for sorting an array
- 8. Program for matrix addition & subtraction
- 9. Program for matrix multiplication
- 10. Program for transpose of a given matrix
- 11. Program for (with and without string functions)
 - i. Comparison of two strings
 - ii. Concatenation of two strings
 - iii. Length of a string
- 12. Program to process student information. Student structure consists Sno, Sname, Marks in 6 subjects, Total, average. Calculate total and average of n students and assign grade with following criteria.
 - Grade A : All pass and avg ≥ 75
 - Grade B: All pass and avg ≥ 60 and avg < 75
 - Grade C: All pass and avg ≥ 50 and avg < 60
 - Grade D: All pass and avg ≥ 40 and avg < 50
 - Grade E: If fails in one or more subjects.
- 13. Program for (i) Nesting of Structure (ii) Passing structures to functions.
- 14. Program to demonstrate (i) Unions (ii) enumerated data types.
- 15. Program for sum of diagonal elements of a square matrix?
- 16. Program to access (i) array elements (ii) Structure elements using pointers.
- 17. Program for sorting strings using pointers.
- 18. Program to count number of (i) words (ii) lines (iii) Special Characters in a given text.
- 19. Program to create a file to store and retrieve strings using fputs() and fgets().
- 20. Program to create a file to store and update employee records. The employee record consists of ENO, ENAME, DEPTNO, DEPTNAME, BASICSalary, HRA, DA, DEDUCTIONS, TOTALSalary and NETSalary.
- 21. Program to evaluate following expressions. $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{n}$
- 22. Program to find Square root of a given no.
- 23. Program to create table of Triangular Numbers.
- 24. Program for reversing digits of a no.
- 25. Program for Base Conversion.

LIST OF PRACTICALS

KVR GOVT. COLLEGE (AUTONOMOUS): : KURNOOL I B.A. CA/CE & I B.Com.C.A. NEW SYLLABUS (Revised syllabus W.E.F.2015- 2016)

FUNDAMENTALS OF COMPUTERS & OFFICE AUTOMATION TOOLS

PRACTICAL PAPER: Office Automation Tools

MS-WORD

1. Design a visiting card for Managing Director of a Company with following specification
 - i. Size of visiting card is 3.5" x 2".
 - ii. Name of a company with big font using Water Mark.
 - iii. Phone number, fax number and e-mail address with appropriate symbols.
 - iv. Office and residence address separated by line.
2. Create a letter head of a company
 - i. Name of Company on the top of the page with big font and good style.
 - ii. Phone numbers, fax numbers, e-mail address with appropriate symbols.
 - iii. Main products manufactured to be described at the bottom.
 - iv. Slogans if any should be specified in bold at the bottom.
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Reports must have following columns
Report1 with REGISTER NUMBER, NAME, MARKS OF ALL SUBJECTS and TOTAL
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3. Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE:

EMP-CODE, EMP-NAME, AGE, GENDER, DOB.

TABLE2 STRUCTURE:

EMP-CODE, BASIC-PAY.

Maintain the relationship between two tables with EMP-CODE as a Primary Key
generate the following reports:

REPORT1:

EMP-CODE, EMP-NAME, BASIC-PAY, DA, HRA, GROSS-SALARY.

REPORT2:

EMP-CODE, EMP-NAME, AGE, GENDER, GROSS-SALARY.

MS-EXCEL

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice versa.

Decimal Numbers: 35, 68, 95, 165, 225, 355, 375, 465

Binary Numbers: 101, 1101, 111011, 10001, 110011001, 111011111.

2. The ABC Company shows the sales of different products for 5 years. Create column chart, 3D-column and Bar chart for the following data.

YEAR PRODUCT-1 PRODUCT-2 PRODUCT-3 PRODUCT-4

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
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2013	400	200	300	1000
2014	1800	400	400	1200

3. Create a suitable examination data base and find the sum of the marks (total) of each student and respective class secured by the student rules:

Pass if marks in each subject ≥ 35 .

Distinction if average ≥ 75 .

First class if average ≥ 60 but < 75 .

Second class if average ≥ 50 but < 60 .

Third class if average ≥ 35 but < 50 .

Fail if marks in any subject is < 35 .

Display average marks of the class, subject wise and pass percentage.

Excel:

1. Create a worksheet in excel by accepting serial number, student name, marks in 3 subjects, calculate total average and find out the maximum and minimum marks.

2. Create a work sheet in excel to show an employee and salaries as per following conditions:

a. D.A is 10% of daily pay.

b. H.R.A is 15% of basic salary

c. Income tax is 6% of basic salary and calculate gross salary.

3. Create a transport reservation with the following description conditions:
 - a. Passenger name not exceed 20 characters with the display message “Please” and enter your name.
 - b. Gender column male or female option in the interaction display request “Select gender please”.
 - c. Set No. ≥ 1 and ≤ 100 with display of message out of range use interactive display request “Enter set number”.
 - d. Class I or II, III to select as T. The amount is 500/- If the class is I is 400/- III is 300/-
4. Create a chart using cricket source and cricketers name and the number of runs using column chart and pie chart.

M.Sc. Botany

SEMESTER-I

UNIT – 1: ALGAE

General characters of algae -thallus diversity, pigmentation and life cycles. Recent trends in classification of algae - a general account. Salient features and classification of Cyanophyta (Cyanobacteria), Rhodophyta, Phaeophyta, Bacillariophyta and Chlorophyta. Economic importance of algae: Algae as food(single cell proteins); biofertilizers; industrial products; biofuels; harmful algae-algal blooms.

UNIT II: BRYOPHYTES

General characters and classification of Marchantiophyta; Anthocerotophyta and Bryophyta. Salient features of the orders and representatives: Marchantiales (Marchantia), Jungermanniales (Porella), Anthoceratales (Anthoceros) and Polytrichales (Polytrichum). Diversity and evolution of gametophyte and sporophyte. Ecology and Conservation of bryophytes.

UNIT III: PTERIDOPHYTES

General characters and classification of pteridophytes. Classification of extinct pteridophytes and salient features of representatives: Psilotopsida (Psilotum), Lycopsidea (Lycopodium), Equisetopsida (Equisetum), Marattiopsida (Angiopteris) and Polypodopsida (Pteris). Origin and phylogeny of pteridophytes- telome theory , stelar theory. Heterospory and Seed habit.

UNIT IV: GYMNOSPERMS AND PLANT FOSSILS

General characters and classification of divisions and salient features of representatives: Cycadophyta (Cycas), Pinophyta (Pinus), Ginkgophyta (Ginkgo) and Gnetophyta (Gnetum). Economic importance of gymnosperms. Principles of Paleobotany - geological time scale; process of fossilization; types of fossils. Brief account on fossil algae, and bryophytes. Fossil pteridophytes – a general account. Salient features and evolutionary significance of fossil gymnosperms - Pteridospermales and Bennitiales.

PRACTICALS

1. Observation of representatives of all groups in the natural habitat.
2. Morphological study of representative members of all groups using whole mount preparations and sections.
3. Study of morphology and anatomy of vegetative structures of Algae, Bryophytes, Pteridophytes and Gymnosperms
4. Each student has to submit herbarium specimens and a report on field study.

SUGGESTED READINGS:

1. Agashe S.N. 1995. Paleobotany. Oxford & IBH, NewDelhi
2. Bernard Goffinet & Jonathan Shaw. 2008. Bryophyte Biology. 2nd ed. Cambridge University Press.
3. Bhatnagar, S.P. & Alok Mitra. 1997. Gymnosperms. New Age Int. (P) Ltd.
4. Charles C. Beck and Charles B. Beck. (Ed). 1988. Origin and Evolution of Gymnosperms. CUP.
5. Chopra, R.N. & P.K. Kumar. 1988. Biology of Bryophytes. Wiley Eastern.
6. Graham, J.E., Lee, W. Wilox & L.E. Graham. 2008. Algae. 2nd ed. Benjamin Cummings
7. Sambamurthy AVSS. 2005. A Text Book of Bryophytes, Pteridophytes, Gymnosperms and Paleobotany. IK International Pvt. Ltd.
8. Sporne, K.R. 1965. Morphology of Gymnosperms. HUP, London
9. Sporne, K.R. 1976. Morphology of Pteridophytes. HUP, London
10. Van den Hoek , Christian D. Mann & H.M. Jahns et al. 1995. Algae, An introduction to phycology. Cambridge University Press.
11. Vashista, P.C. 2005. Gymnosperms. S.Chand & Co., New Delhi
12. Vashista, P.C. 2005. Pteridophyta. Revised ed., By Sinha and Anil. S. Chand & Co, New Delhi.
13. Vashishta, B.R., V.P.Singh & A.P. Sinha. 2012. Botany for Degree Students: Algae. 34th ed. S. Chand & Co, New Delhi.
14. Vashishta, B.R., A.K. Sinha & Adarsh Kumar . 2011. Botany for Degree Students Part III Bryophyta.. 3rd ed. S. Chand & Co, New Delhi

PAPER 102: PLANT TAXONOMY

UNIT – 1: ANGIOSPERMIC CLASSIFICATION AND PHYLOGENY

Plant taxonomy- scope and significance. History of plant classifications: Artificial, Natural and Phylogenetic classifications. Natural system- Bentham and Hooker's classification. Principles of phylogenetic classifications–data sources; Plesiomorphy, apomorphy; monophylly and polyphylly. Cladograms and Phylogenetic trees. Angiospermic Phylogeny Group classification (APG-III). Clades, Orders and Families. A Comprehensive account on origin, phylogeny and diversification of angiosperms.

UNIT –II: FLORISTIC STUDIES AND HERBARIUM METHODOLOGY

Plant explorations around the world – a general account. Floristic inventories in India – a general account. Botanical Survey of India - organisation and activities. Flora of Andhra Pradesh – a general account; endemic plants and threatened taxa. Herbarium methodology- methods of collection, processing and preservation of plant specimens. Significant herbaria of the world and India.

UNIT – III: PLANT IDENTIFICATION AND NOMENCLATURE

Process of identification- conventional and modern approaches; Preparation of taxonomic keys. Taxonomic literature- floras, journals and databases. International Code of Nomenclature(ICN)- Principles, Rules and Recommendations; taxonomic hierarchy-species, genera and families; typification , rule of priority; concept of names and author citation; effective and valid publication. Describing a new species.

UNIT – IV: STUDY OF SELECTED ANGIOSPERMIC CLADES-ORDERS

Salient features , distribution and diversity of the following groups (based on APG –III); ANITA Grade; Magnolias (Magnoliales- Annonaceae); Monocots (Asparagales- Orchidaceae); Commelinids (Poales- Poaceae); Fabids (Fabales- Fabaceae, Malpighiales- Euphorbiaceae); Malvids (Malvales- Malvaceae, Caryophyllales-Amaranthaceae); Lamids (Gentianales- Apocyanaceae, Solanales- Solanaceae, Lamiales- Lamiaceae); Campanulids (Asterales- Asteraceae).

PRACTICALS

1. Study of about 25 wild taxa representing different families and identification to species level
2. Study of flora of the college campus
3. As a part of Botanical Tour, student should observe and record the flora and vegetation types of the study area and submit a report at the time of practical examination
4. Part of practical, student should submit 50 herbarium specimens of common wild plant taxa
5. Construction of Taxonomic Keys

6. Nomenclatural exercise

SUGGESTED READINGS:

1. Angiosperm Phylogeny Group website. 2015. Consult [www.apgweb](http://www.apgweb.org).
2. Gamble & Fischer 1915-35. Flora of Presidency of Madras. 3 Vols. BSMS, Dehradun
3. Heywood, V.H., RK Burmmitt, A. Culham, O. Seberg. 2007. Flowering plant Families of the World. Firefly books Ltd. New York.
4. Judd, W.S., Christopher, S. Campbell, Elizabeth A. Kellogg, Peter F. Stevens and Michael J. Donoghue. 2007. Plant Systematics: A Phylogenetic Approach, 3rd ed. Sinauer.
5. Lawrence, G.H.M. 1951. Taxonomy of vascular plants. McMillan, New York.
6. Naik, V.N. 1992. Taxonomy of Angiosperms. 2nd Edn. Tata Mc Graw Hill Publications.
7. Pullaiah, T. 2005. Taxonomy of Angiosperms. Regency publications, New Delhi.
8. Pullaiah, T. et al. 1997. Flora of Andhra Pradesh. 4 Vols. Scientific Publishers, Jodhpur
9. Radford, A.E. et. al. Vascular plant systematic. Harper & Row. New York.
10. Ravi Prasad Rao, B. 2014. The Plant Directory. Anusha Publishers, Hyderabad.
11. Simpson, Michael G. 2006. Plant Systematics. Elsevier & Academic Press.
12. Singh, Gurucharan. 2005. Plant Systematics. Oxford & IBH. New Delhi.
13. Sivarajan, V.V. 1991. Introduction to Principles of Plant Taxonomy. Oxford & IBH. New Delhi.

PAPER 103: PLANT DEVELOPMENT AND REPRODUCTION

UNIT –I: MERISTEMS, TISSUE SYSTEMS AND SHOOT DEVELOPMENT

Meristems, classification and types. Organization of shoot apical meristem. Simple and Complex tissues. Structure and development of xylem and phloem. Epidermal, ground and vascular tissue systems - cambium, laticifers, periderm, lenticels, Stem-anatomy of node, primary structure and secondary growth: annual rings, heart wood and sap wood , hard and soft wood, reaction wood. Anomalous secondary growth.

UNIT – II: ROOT, LEAF AND FLOWER DEVELOPMENT

Root-Organization of Root apical meristem (RAM), quiescent centre, vascular tissue differentiation. Primary structure and Secondary growth in roots. Leaf growth and differentiation-histology and development of angiosperm leaf . Floral meristems- development of flower with reference to Arabidopsis and Antirrhinum. Programmed cell death, ageing and senescence.

UNIT III: PLANT REPRODUCTION-MALE AND FEMALE GAMETOPHYTES

Microsporangium, microsporogenesis and male gametophyte. Anthers-structure and development of anther wall– anther tapetum- secretory and periplasmodial, role of tapetum. Male gametophyte development. Pollen wall –structure and development. Types of ovules, megasporogenesis. Embryosac – ultra structure, development and types: monosporic, bisporic and tetrasporic; nutrition of the embryosac. Pollination and fertilization: pollen–pistil interactions, double fertilization.

UNIT IV: ENDOSPERM, EMBRYO, POLYEMBRYONY AND APOMIXIS

Development of Endosperm-nuclear, cellular and helobial types; endosperm haustoria, composite and ruminant endosperm. Development of embryo in dicots- onagrad, asterad, chenopodiad, caryophyllad and solanad types; suspensor. Polyembryony – nucellar, integumentary, synergid, zygotic, suspensor and multiple types; twins and triplets; causes of polyembryony and applications. Apomixis- apospory, diplospory, pseudogamy, semigamy, parthenogenesis.

PRACTICALS

1. Examination of meristems
2. Study of tissues and tissue systems.
3. Study of internal organization of different types of stems and roots.
4. Study of internal organization of plants showing anomalous secondary growth.
5. Study of epidermal peels of leaves to study the development and structure of stomata for stomatal index.
6. Study of microsporogenesis and gametogenesis in anther sections.
7. Examination of anthers dehiscence and collection of pollen grains for

microscopic examination (maize, grasses, brinjal, Crotalaria, Tradescantia, Brassica, Petunia, etc.)

8. Study of pollen grains by acetolysis.
9. Dissection and mouting of endosperm and embryo showing developmental stages and haustoria.

SUGGESTED READINGS:

1. Bhojwani, S.S. and S.P. Bhatnagar 2002. The embryology of Angiosperms (4th ed.) Vikas Publication House, New Delhi.
2. Eames, A.J. and E.M. McDaniels. 1947. An Introduction to Plant Anatomy. Mc Graw Hill Book Company ,New York.
3. Esau. K. 1979. Anatomy of seed plants. John Willy & Sons
4. Fahn. A. 1992. Plant Anatomy 3rd Ed. Pergamon press,Oxford.
5. Johri, B.M. 1984, Embryology of Angiosperms Springer-Veriag ,Berlin.
6. Johri, B.M. 1981. Experimental embryology of vascular plants. Springer-Verlag, Berlin.
7. Maheswari,P.1980. An Introduction to the Embryology of Angiosperms, Tata, mccrawin
8. Pullaiah, T., K.C. Naidu, K. Laxmi Narayana and B. Hanumantha Rao. 2007. Plant Development , Regency Publications , New Delhi.
9. Raghavan, V. 1999. Developmental Biology of Flowering Plants. Springer Verlag, Berlin.

PAPER 104: PLANT PHYSIOLOGY

UNIT I: PLANT AND SOIL WATER RELATIONS

Thermodynamic concept of plant cell and water relations. Water Potential, Osmotic potential and Pressure potential. Dynamics of SPAC. Active and Passive absorption of Ions. Essential elements- functions and deficiency symptoms. Stomatal structural features; mechanism of stomatal movements and stomatal Index. Stomatal responses to environmental factors, antitranspirants and their importance in drought resistance.

UNIT II: PHOTOSYNTHESIS

Current knowledge on mechanism of photosynthesis- LHCs, photochemical reactions, electron transport in chloroplasts. Oxygen evolution and photophosphorylation. Carbon fixation pathways- Reductive PPP and its regulation by light and metabolites; C4 pathway; CAM Pathway; C-3, C-4 Intermediates. Photosynthesis vs. Plant productivity. Photorespiration- Glycolate pathway, Significance of photorespiration.

UNIT III: RESPIRATION AND PLANT GROWTH REGULATORS

Significance of Plant Respiration; Glycolysis, TCA Cycle, ETS and ATP synthesis. Pentose Phosphate Pathway. Glyoxylate cycle, Alternate oxidase system. Biosynthesis and mechanism of action of plant growth regulators- Auxins, Gibberellins, Cytokinins, Brassinosteroids, Abscissic acid, Jasmonic acid and salicylic acid. Role of hormones in agriculture. Physiology of flowering- Kinetics of phytochrome; Photoperiodism

UNIT IV: NITROGEN METABOLISM

Biological nitrogen fixation : Symbiotic and Asymbiotic; Legume - Rhizobium symbiosis; nodule formation; mechanism of nitrogen fixation; mechanism of nitrate uptake, reduction and ammonia assimilation.

PRACTICALS

1. Determination of total chlorophyll content and a/b ratio in leaves.
2. Separation of chloroplast pigments into two or four groups. Record of their absorption spectra
3. Determination of cell permeability by using Beet Root tissues.
4. Determination of stomatal index and frequency in leaves
5. Determination of water potential of the tissue
6. Comparative anatomy of C3, C4 and CAM plants
7. Determination of Titrable acidity (TAN) in leaves of CAM plants
8. Determination of viability of different seed material.
9. Estimation of IAA by Solkowski rection
10. Determination of membrane stability and chlorophyll stability index

11. Estimation of free proline in stressed plant samples.

SUGGESTED READINGS

1. Buchannan et al., 2001. Biochemistry and Molecular Biology of plants.
2. Delvin ,RM. 1969. Plant Physiology. Affiliated East West Newyork Ltd.
3. Dennis, DT., DB. Layzell, DD. Lefebvre & D. Turpin. 1997. Plant Metabolism . 2nd Ed. Addison Wesley Pub Co. New York
4. Govindjee, ed. 1982-83. Photosynthesis. Vol I & II. Academic Press Inc. New York.
5. Hopkins, W. 1998. Introduction to Plant Physiology. ELBS & Longman, Essex., England.
6. Kocchar and Gujral. 2012. Comprehensive Plant Physiology. Mac Milan Pub.
7. Raghavendra, S. 1998. Photosynthesis: A Comprehensive Treatise. Cambridge University Press, Cambridge, UK
8. Salisbury, F.B. and C. S. Ross. 1992. Plant Physiology. 4th Ed. Worsworth Publishing & Co. , Belmont , California.
9. Taiz and E. Zeiger. 1998. Plant Physiology. 2nd Edition. Sinauer Associates Inc Publishers, Massachusetts, USA
10. Thomas C. Moore. 1992. Biochemistry and Physiology of Hormones. Narosa .
11. Wilmer, C.M. & M. Fricker. 1996. Stomata. 2nd Ed, Chapman Hall.

SEMESTER –II

PAPER 201 : FUNGI, PLANT PATHOLOGY AND PLANT BREEDING

UNIT I: FUNGI

General characteristics and modern trends in fungal classification. Salient features and classification of Gymnomycota (Myxomycota). Mastigomycota, Deuteromycota and Amastigomycota (Zygomycotina, Ascomycotina, Basidiomycotina). Structure and reproduction of lichens and mycorrhizae; economic importance of fungi- beneficial and harmful; mushroom cultivation.

UNIT II: PLANT DISEASES (FUNGAL)

Classification of fungal diseases. Symptomatology of fungal diseases. Disease cycle and control measures of club rot of crucifers, rust of wheat, smut of sorghum, powdery mildew of grapes, red rot of sugarcane, leaf spot of groundnut. Control of fungal diseases- physical, chemical and biological methods. General account on Integrated Pest Management.

UNIT III: PLANT DISEASES (BACTERIAL AND VIRAL)

General characteristics and modern classification of bacteria. Plant diseases caused by bacteria- symptomatology and disease cycle of leaf blight of rice, blight of cotton, common scab of potato and citrus canker. Plant viruses: classification, transmission and control of plant viruses; a brief account on plant diseases caused by viruses- yellow mosaic of legumes, mosaic disease of tobacco, bunchy top of banana.

UNIT IV: PLANT BREEDING

Methods of Breeding for Self Pollinated and Vegetatively Propagated Crops. Pureline selection, Mass selection, Clonal Selection, Marker- assisted Selection. Hybridization, Pedigree method. Synthetic varieties. Methods of Breeding for Cross Pollinated Crops. Hybrid vigour, Inbreeding Depression and Genetic basis of Heterosis.

PRACTICALS

1. Study of gram negative and gram positive bacteria
2. Morphological study of different fungal spores
3. Study of symptomatology of locally available diseased specimens
4. Plant Breeding Experiments

SUGGESTED READINGS:

1. Agrios, GN. 2005. Plant Pathology. 5th ed. Academic Press.
2. Ainsworth, G.C., E.K. Sparrow and A.S. Sussman. 1973. The Fungi- An Advanced Treatise. Academic Press.
3. Alexopolous, C.J., C.W. Mims & M. Blackwell 1996. Introductory Mycology. John Wiley & Sons.
4. Madigan, M.t. and John M.Martinko.2014. Brocks Biology of Microorganisms. 14th ed.Pearson Education.
5. David Allen Sleper & J.M. Poehlman. 2006. Breeding Field Crops. 5th Ed. John Wiley & Sons.
6. D.K. Maheswari. & R.C. Dube. 2013. Microbiology. S. Chand & Co. Ltd., New Delhi.
7. Gilbert, O.L. 2000. Lichens. Collins New Naturalist
8. Jens H. Peterson. 2013. The Kingdom of Fungi. Princeton University Press
9. Mehrotra, R.S. & K.R. Aneja. 1990. An Introduction to Mycology. Wiley Eastern Ltd.
10. Pandey, B.P. 2005. Plant Pathology. S.Chand & Company, New Delhi.
11. Pelczar, M.J., E.C.S. Chan &N.R. Krieg. 1986. Microbiology. Tata McGraw Hill, New Delhi.
12. Robert W.Allard. 1999. Plant Breeding. 2nd ed. John Wiley & Sons.
13. Singh, R.S. 2009. Introduction to Principles of Pathology. 4th ed.
14. Vashishta, B.R. 2002. Fungi. 11th ed. S.Chand & Co. New Delhi.

PAPER 202 : MOLECULAR GENETICS AND TECHNIQUES IN BIOLOGY

UNIT I: INHERITANCE, RECOMBINATION AND MAPPING

Mendelian laws of inheritance- an overview. Genetic conventions, notations and terminology. Linkage , Chromosome as a linkage unit , factors affecting linkage; Genetic recombination: types and molecular mechanism of recombination. Factors affecting recombination. Chromosomal mapping; Two factor and Three factor mapping , Mapping by recombinational frequencies. Coefficient of coincidence of double crosses, Interference –types and significance.

UNIT II: MUTATION AND POPULATION GENETICS

Modern concept of gene, Mutations–types. Chromosomal structural aberrations: deficiencies, duplications, translocations, inversions and their significance in evolution. Numerical changes in chromosomes: aneuploidy and euploidy, polyploidy and their significance in evolution; molecular mechanism of mutagenesis.

UNIT III: pH, MICROSCOPY, CENTIFUGATION AND CHROMATOGRAPHY

pH- Measurement of pH, biochemical buffers, selection of biochemical buffer, oxygen electrode and biosensors. Principles and applications of Microscopy- Light microscope, Phase contrast and Electron microscope. Fixation and staining methods. Centrifugation – basic principles of sedimentation, Types of centrifuges. Preparative ultracentrifugation- differential centrifugation, density gradient, analytical ultracentrifugation and applications. General principles, definitions and applications of chromatography. Paper chromatography, thin-layer chromatography, gas-liquid chromatography.

UNIT IV:ELECTROPHORESIS, SPECTROSCOPY AND RADIO ISOTOPE TECHNIQUES

Principles, definition and applications of SDS-PAGE, Agarose gel electrophoresis. Laws of light absorption, Instrumentation and applications of UV-Visible spectrophotometer. Radioisotope Techniques –types of isotopes, radioactive decay. Detection and measurement of radioactivity. Autoradiography, Isotopes used in biology.

PRACTICALS

1. Problems related to Genetics
2. Separation and identification of amino acids by paper chromatography
3. Separation and identification of sugars by TLC
4. Separation and identification of Lipids by TLC
5. Separation of amino acids by Ion –exchange chromatography
6. Separation of proteins by PAGE
7. Separation of Pigments by paper chromatography

8. Isolation and spectrophotometric characterization of plant pigments.

SUGGESTED READINGS

1. Alberts A et al. 1994. Molecular Biology of cell. Garland publ. New York.
2. Cantor, C.R. and P.R. Schimmel. Biophysical Chemistry by , W.H. Freeman & Co.
3. Copper Geoffrey, M. 2000. The Cell - a Molecular approach. 2nd Edn. ASM Press, Washington.
4. De Robertis EDP & EMF De Robertis . 2001. Cell and Molecular biology. Lippincott Williams & Wilkins.
5. Freifelder D. 1990. Molecular biology. Narosa publication house, New Delhi.
6. Gardner E J & D P Snustad 1996. Principles of Genetics. John Willey, New York.
7. Glasel A. and M.P. Deutscher. 1995. Introduction to Biophysical Methods for Protein and Nucleic Acid Research. Academic Press.
8. John M. Wrigglesworth. 1983. Biochemical research technique (A Practical Introduction)
9. Strickberger MW 1996. Genetics III edn. McMillan, New York.
10. Cooper, T.G. The tools of Biochemistry. Wiley Eastern.
11. Vanholdem, K.E. and W.C. Johnson. 1988. Principles of Physical Biochemistry. Wilson & Walker. 1986. Practical Biochemistry: Principles & Techniques. Cambridge University Press.

PAPER 203 : PLANT BIOCHEMISTRY

UNIT I: BIOENERGETICS

Energy transformation in living systems, Laws of thermodynamics, free energy and standard free energy changes, Phosphate group transfer and ATP, free energy from hydrolysis of ATP, High energy phosphates as currency of cell. Biological oxidation-reduction reactions and their half reactions.

UNIT II: ENZYMES

Nomenclature and classification- Isoenzymes, structure; Ribonuclease, Lysozyme, Chymotrypsin. Mode of action of enzymes; enzyme-substrate complex Inhibition: Competitive, Non competitive and Feed back inhibition. Regulation of enzyme activity. Enzyme Kinetics: Michaelis- Menten equation and Reversible reactions.

UNIT III: CARBOHYDRATES AND PROTEINS

Classification and properties of carbohydrates of Mono (Glucose, Galactose, Fructose), Oligo (Lactose, Maltose, Sucrose) and Polysaccharides: Homopolysaccharides (Starch, Glycogen, Cellulose and Heteropolysaccharides. Gluconeogenesis. Amino acids: Non standard protein and aminoacids, peptides structure and reactions. Proteins: Primary structure and its sequence determination, Secondary, Tertiary and Quarternary structural features of proteins (Ramachandran plot).

UNIT IV: LIPID METABOLISM

Chemical composition of plant lipids. α - Oxidation and β - Oxidation of fatty acids. Biosynthesis of fatty acids - malonyl CoA and long chain saturated and unsaturated fatty acids.

PRACTICALS

1. Estimation of proteins in plant samples by Biuret or Lowry's method
2. Estimation of Reducing sugars in plant samples by Nelson's method.
3. Determination of Amylase activity in germinating seeds
4. Estimation of Amino acids by Ninhydrin method
5. Determination of Catalase activity in germinating seeds
6. Reaction of amino acids and sugars

SUGGESTED READINGS

Buchnan, Gruissen & Jones. 2001. Biochemistry and Molecular Biology of Plants.
Dennis, D.T., D.B. Layzell, D.D. Lefebrye & D. Turpin. 1997. Plant Metabolism. 2nd ed. Addison Wesley Pub. Co. New York.
Dey and Horborne. 1998. Plant Biochemistry. Academic Press.
Heldt, H.W. 1997. Plant Biochemistry and Molecular Biology. OUP.
Horton, HR, MoranLA, Ochs RS et al., 2001. Principles of Biochemistry, III edn. Prentice Hall.
Lehninger, A.L. 2001. Biochemistry. Kalyani Publishers. Ludhiana.

Mathews CK, Van Holde KE and Ahem KG. 2000. Biochemistry III edn. Sanfransico. Benjamin Cummings.

Thomas C. Moore. 1992. Biochemistry and Physiology of Plant Hormones. II Eds. Narosa Publishers.

Wilkins, M.B. (ed) 1987. Advanced Plant Physiology. ELBS & Longman. Essex., England.

PAPER 204: OPEN ELECTIVE –I: PLANTS AND HUMAN WELFARE

UNIT I : PLANTS AND ENVIRONMENTAL VALUES

Plants-Ecosysstem services. Direct, Indirect and optional (future possibilities of usage) services. Human ciivlization and Plants – Agriculture and Forestry. Plants and landscape ecology. Plants role in soil protection and water conservation. Role of plants in climate change scenario-carbon credits. Plants in combating pollution- as bioremediants. Poisonous plants. Aliens and invasive species.

UNIT II: PLANT RESOURCES

Brief account of the following plant Resources(examples limited to 10 under each category)- local,common and botanical names; morphology and utility Edible Resources- Cereals, Millets, Pulses, Spices and Condiments; Fruits and Nuts; Vegetables; Starch and Sugar Yielding Plants; Oil yielding plants.Plants yielding essential oils, saponins, fibres, cellulose products: gums, resins, rubber, tannins and dye yielding plants. Plants as sources of timber, biofuels and fire wood. Forage plants and Ornamental Plants.

UNIT III: PLANTS AND MEDICINE

Introduction, History, Scope and importance of Indigenous systems of medicine (Ethnomedicine, Traditional medicine, Ayurveda, Siddha, Unani), Homeopathy and Allopathy. Different types of crude drugs- based on originappplication and purpose/use. Wild and Potential Drug Yielding plants and their therapeutic values with reference to forests of AP. Phytomedicine and Applications; Importance of phytopharmaceuticals, Pharmacognosy-Principles, Identification of different constituents. Classification of Drugs . Analytical methods- drug adulteration and evaluation. Phytopharmacology and Molecular Farming

UNIT IV: PLANTS AS MODEL ORGANISMS

Introduction to model organisms.Types of model organisms. Genomic model organisms, Genetically modified organisms. Use of Model organism. Important model organisms- prokaryotes and Eukaryotes. E.coli., Chlamydomonas reinhardtii, Arabidiopsis thaliana, Zea mays, Nicotiana benthamiana . Transgenic plants. Plants as bioreactors. Plantibodies.

SUGGESTED READINGS:

1. Alan beebay & anne- Maria Brennan. 2008. First Ecology. 3rd ed. Oxford University press.
2. Cotton CM. 1996. Ethnobotany: Principles and Applications
3. Cunningham, W.P. & M.A. Cunningham. 2007. Principles of Environmental Science- Inquiry and Applications. Tata Mc Graw Hill Publications. New Delhi.
4. Hill, Albertt, F. 1952. A Text Book of useful plants and plant products. Tata Mc Graw Hill Publications. New Delhi.
5. Kokate , C.K. AP. Purohit & SB .Gokhale. 2000. Pharmacognosy. Nirali Prakasan Publications.
6. Rao, RaviPrasad B. 2005. Biodiversity. In Pullaiah.T. (ed) Taxonomy of Angiosperms. Regency Publications. New Delhi. Pp: 287-317.
7. Sambamurthy, A.V.V. S. & N.S. Subbramaniyam 2000. Economic Botany of Crop Plants. Asiatech Publishers Inc.
8. Trease, GE. And WC. Evans. 2002. Pharmocognosy. Saunders. New York.

M.Sc. Chemistry

ANNEXURE - I

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

Re-Accredited by NAAC with Grade "A"

CHOICE BASED CREDIT SYSTEM

FIRST YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)/NATURAL PRODUCTS (NP)

I SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)

CHEM-OC/NP: 101: PAPER-I INORGANIC CHEMISTRY –I

UNIT-I	: METAL LIGAND BONDING AND MAGNETIC BEHAVIOUR OF COMPLEXES
UNIT-II	: METAL LIGAND EQUILIBRIA IN SOLUTION AND THEORY OF HSAB
UNIT-III	: METAL CARBONYL AND METAL NITROSYL COMPLEXES
UNIT-IV	: POLYACIDS AND ORGANOMETALLIC CHEMISTRY

UNIT-I: METAL – LIGAND BONDING AND MAGNETIC BEHAVIOUR OF COMPLEXES

(i)Metal –Ligand Bonding: Crystal Field Theory (CFT) for bonding in transition metal complexes, crystal field splitting of d – orbitals in octahedral, tetrahedral, tetragonal and square planar fields. Crystal Field Stabilization Energy (CFSE) and its calculation in six and four coordinated complexes, Spectrochemical series with reference to ligands and metal ions. Factors affecting the magnitude of Δ_o in octahedral complexes, Jahn- Teller effect and its consequences. Shortcomings of CFT; Covalency: Evidence for covalency, Nephelauxetic effect; Molecular orbital theory: Concept of Ligand Group Orbitals (LGOs), MO diagrams for octahedral, tetrahedral and square planar complexes, MO treatment of π -Bonds.

(ii)Magnetic Behaviour of Complexes: Types of magnetic behavior, Temperature independent paramagnetism. Magnetic susceptibility and its determination by Gouy's and Faraday's methods. Calculation of Magnetic moment from magnetic susceptibility, spin-only formula, orbital contribution to magnetic moment (Oh and Td Complexes)

UNIT-II: METAL –LIGAND EQUILIBRIA IN SOLUTION AND THEORY OF HSAB

(i)Metal-ligand equilibria in solution

Stepwise and overall formation constants and their interrelationship, Trends in stepwise formation constants, factors affecting the stability of metal complexes, Chelate effect, Determination of binary formation constants by pH-metry and spectrophotometric methods.

(ii)Theory of HSAB

Hard and soft acids and bases, Classification, Acid-Base strength and hardness, Symbiosis, Electronegativity and hardness, Application of HSAB: Biological functions and toxicology of metals, and medicinal applications.

UNIT-III: METAL CARBONYL AND NITROSYL COMPLEXES

Nature of π bonding, classification of π ligands, effect of π bonding on the ligand field splitting energy of octahedral complexes. Π -bonding and spectrochemical series, π -donor ligands and π -acceptor ligands

Metal carbonyls: Synthesis of metal carbonyls, structures of metal carbonyls of the types $M(CO)_n$ ($M=Cr, Fe, Ni$; $n=4-6$), $M_2(CO)_n$ ($M=Co, Fe, Mn$; $n=8-10$), $M_3(CO)_{12}$ ($M=Fe, Ru$ and Os) $M_4(CO)_{12}$ ($M=Co, Rh$, and Ir). IR spectra of metal carbonyls- (i) Detection of bridging CO ligand, (ii) Determination of molecular symmetry and (iii) Determination of bond angles in metal carbonyls. Synergistic effect, EAN and 18- electron rules as applied to metal carbonyls, Electron counting methods- (i) Oxidation State method and (ii) Neutral Atom method, Applications of Metal Carbonyls

Metal Nitrosyls : Synthesis of metal nitrosyls, Bonding , Electron donation by nitric oxide, Principles of stoichiometry, Models for NO bonding – (i) Covalent model and (ii) Ionic models, Structures of Metal nitrosyls (1) $[IrCl(PPh_3)_2(CO)(NO)]^+$, (2) $[RuCl(PPh_3)_2(NO)_2]^+$, (3) $[(Cp)CrCl(NO)_2]^+$ (4) $(Cp)_2Cr_2Cl(NO)_4]^+$, (5) $[Co(diams)_2(NO)]^{2+}$ and (6) $[Co(diams)_2(NO)(SCN)]^+$, Detection of bridging NO ligand, Stereochemical control of valency in cobalt complexes, Applications of metal nitrosyls.

UNIT-IV: POLYACIDS AND ORGANOMETALLIC CHEMISTRY

Polyacids: Introduction to polyacids- Types of polyacids- Isopolyacids, Isopoly molybdates, Isopoly tungstates, Isopoly vanadates, Structures of Polyacids $[Mo_7O_{24}]^{6-}$, $(V_{10}O_{28})^{6-}$ and $W_4O_{16}]^{8-}$, Heteropolyacids- properties of heteropolyacids and salts, structures of heteropolyacids and theories , Mialali copause and Roscenneum theories , Pauling's theory and keggins's theory, applications of polyacids.

Organometallic Chemistry: Introduction to 18-electron rule, Classification based on hapticity and polarity of M-C bond, nomenclature of organometallic compounds, Thermal stability-thermochromism, Preparation, properties of methyl and phenyl organo magnesium, organo boron, organo aluminium and organo silicon compounds.

Reference Books

1. Inorganic Chemistry by J. E. Huheey, E.A. Keiter and R.A. Keiter, 4th edition, Harper Collins, 1993.
2. Advanced Inorganic Chemistry by F.A. Cotton, G. Wilkinson, C.A. Murillo and M. Bochmann, 6th edition, Wiley Interscience N.Y, 1999.
3. Coordination Chemistry by F. Basalo and R. Johnson (WA Benjami Inc), 1964.
4. Inorganic Chemistry, Principles and Applications by I.S. Butler and I.F. Harper, Benjami Cummings, Redwood City, CA, 1989.
5. Chemistry of Complex equilibria , M.T.Beck, Von nostrand Reinhold,London,1990.

6. Metal Complexes in aqueous solutions, A.E.Martell and R.D. Hancock, Plenum Press New York., 1996.
7. Mechanism of Inorganic Reactions by F.Basalo and R.G.Pearson, 2nd Edn.,
8. Concise Inorganic Chemistry by J. D. Lee, 4th edition, ELBS, 1994.
9. Concise Inorganic chemistry by J.D. Lee, 5th edition, Blackwell Science Ltd. 1996.
10. Inorganic Chemistry by J.E.Huheey,E.A.Keiter and R.A.Keiter, 4th edition, Addison Wesley Publishing Company,New York,2000.
11. Chemistry of Elements by N. N. Greenwood, Pergamon press.
12. Organometallic chemistry by R.C Melhotra and A.Singh.
13. Inorganic Chemistry: G.Wulfsberg (university Science Books)
14. Modern Inorganic Chemistry W.L.Jolly, 2nd Ed. (McGraw-Hill).
15. Coordination Compounds. S.F.Kettle 9(supringer).
16. Magnetochemistry , R.L. Carlin(Supringer-Verlag NewYork)
17. Elements of magneto chemistry R.L. Dutta and A.Syamal.2nd Ed.(AffiliatedEnst-West Press pvtLtd
18. Introdatation to Ligand Fields B.N. Higgis (Krieger pub Co)

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M Sc., ORGANIC CHEMISTRY (OC)/NATURAL PRODUCTS (NP)
I SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
CHEM-OC/NP: 102: PAPER-II ORGANIC CHEMISTRY –I

UNIT - 1: STEREOCHEMISTRY

UNIT – 2: DETERMINATION OF REACTION MECHANISM

UNIT- 3: REACTION MECHANISM –I

**UNIT- 4: INTRODUCTION TO REACTIVE INTERMEDIATES AND MOLECULAR
REARRANGEMENTS**

UNIT - 1: STEREOCHEMISTRY 15 Hours

Molecular representations of organic molecules – Wedge, Fischer, Newman and Saw-horse formulae, their description and inter-conservation. Stereoisomerism – Definition and classification.

Molecular symmetry and chirality in organic molecules: Symmetry operations, symmetry elements (C_n , C_i and S_n) – Point group classification. Chiral point groups classifications of stereoisomers based on symmetry and energy considerations – Dissymmetric and asymmetric molecules.

Molecules with a single chiral centre: Chiral manifestations (absence of reflection symmetry, exhibiting optical activity and specific rotations etc). Molecules with a tetra-co-ordinate chiral centre (quaternary ammonium salts, N-oxides, silane derivatives, phosphines and sulfones). Molecules with a tri coordinate chiral centre (tertiary amines, carbanions, phosphines and sylfoxides). Concept of dynamic enantiomerism.

UNIT – II: DETERMINATION OF REACTION MECHANISM 15 Hours

A. Energy considerations: a). Kinetics b).Reactivity and rates of reactions c).Catalysis d).Competitive reactions: thermodynamic and kinetic control e).Hammett Equation f).Curtin - Hammett Principle g).Taft Equation

B. Methods of determination of reaction mechanisms: a).Product analysis b). Determination of the presence of intermediates c). Cross over experiments d). Isotopic labeling e). Stereo chemical evidence and f). Kinetic evidence

(For this unit refer Trinity Publication revised edition-2015 “**Reaction mechanism in organic chemistry by S.M.Mukherji and S.P.Singh**”)

UNIT – III: REACTION MECHANISM – I: 15 Hours

A brief review of Nucleophilic Substitution Reactions at saturated carbons. S_N^1 , S_N^2 and S_N^i -mechanisms and stereochemistry – Factors effecting the rate of S_N^1 and S_N^2 reactions such as substrate structure, nature of leaving group, nucleophile and the solvent.

Neighbouring group participation : Definition, criteria of determining neighbouring group participation (enhanced reaction rates, retention of configuration, isolation of cyclic intermediates and isotope labeling) – Examples of neighbouring group participation involving halogens, oxygen, sulphur, nitrogen, aryl, cycloalkyl groups σ - and π - bonds. Introduction to non classical carbonium ions.

Aromatic nucleophilic substitutions: S_N^1 (Ar), S_N^2 (Ar) and benzyne mechanisms. Evidence for the structure of benzyne. Ambient nucleophiles – Definition & types. SET – Mechanism.

Determination of reaction mechanism, Energy profiles of addition and elimination reactions, transition states, product isolation and structure of intermediate, use of isotopes, chemical trapping, cross over experiments, Use of IR and NMR in the investigation of reaction mechanism.

UNIT- IV: INTRODUCTION TO REACTIVE INTERMEDIATES AND MOLECULAR REARRANGEMENTS: 15 Hours

Reactive intermediates- Generation, Structure and stability of (i) carbocations, (ii) carbanions, (iii) carbenes, (iv) nitrenes and (v) free radicals.

Molecular rearrangements: Definition & Classification, Molecular rearrangements involving (i) electron deficient carbon Wagner-Meerwein, Pinaco-Pinacolone and Wolf rearrangements. (ii) Electron deficient nitrogen; Hoffman, Lossen, Curtis, Schmidt and Beckmann rearrangements. (iii) Electron deficient oxygen Baeyer-villiger oxidation.

Base catalyzed rearrangements, Benzilic acid rearrangement, Favorskii rearrangement, Trans annular and Sommelet-Hauser rearrangement.

Reference Books

1. Stereochemistry of carbon compounds by Ernest L. Eliel
2. Stereochemistry by V.M. Potapov
3. Stereochemistry of organic compounds – Principles and applications by D. Nasipuri

4. Stereochemistry, Conformation and Mechanism by P.S. Kalsi
5. The third dimension in organic Chemistry by Alan Bassindale
6. Organic Chemistry by T.J. Solmons
7. Organic Chemistry by Robert T. Morrison and Robert N. Boyd
8. A guide book to mechanism in Organic Chemistry by Peter Sykes
9. Advanced Organic Chemistry: Reactions, Mechanism & Structure by Jerry March.
10. Reactive Intermediates by Issac
11. Mechanism and structure in Organic Chemistry by S. Mukherjee
12. Name Reactions by Jie

ANNEXURE - I

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CHOICE BASED CREDIT SYSTEM
FIRST YEAR M.Sc. CHEMISTRY
M Sc., ORGANIC CHEMISTRY (OC)/NATURAL PRODUCTS (NP)
I SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2013-2014)
CHEM-OC/NP: 103: PAPER-III PHYSICAL CHEMISTRY –I

UNIT - I: THERMODYNAMICS- I

UNIT- II: ELECTOCHEMISTRY- 1

UNIT- III: QUANTUM CHEMISTRY – I

UNIT -IV: CHEMICAL KINETICS - I

UNIT - I: THERMODYNAMICS – I : 15 Hours

A. Brief review of Thermodynamic concepts – Enthalpy, entropy, free energy. Concept of Entropy – Entropy as a state function – Entropy change in reversible process and irreversible process – Temperature – Entropy diagrams – Entropy change and Phase change – Entropy of mixing – Entropy and disorder.

B.Free energy and Work function: Concept of free energy – work function and free energy relationships – The Gibb's Helmholtz equations – Conditions of equilibrium – Maxwell relationships.

C.The third law of Thermodynamics – Entropy at absolute zero, experimental determination of entropy – Entropies of gases – Tests of the third law of thermodynamics.

UNIT – II: ELECTROCHEMISTRY – I : 15 Hours

A. Reversible cells – Chemical cells and concentration cells – Types of reversible electrodes – Electrode potentials. Reactions in reversible cells – Nernst equation – thermodynamic and kinetic derivation – Concentration cells with and without transference. Liquid junction potential and its determination.

B.Potentiometric titrations – Determination of pH, Solubility product from EMF measurements.

C.Theory of electrolytic conductance – Debye - Huckel Onsager equation and its verification – Wein effect. Conductometric titrations, Determination of solubility of a sparingly soluble salt.

UNIT – III: QUANTUM CHEMISTRY – I : 15 Hours

A.A quick review of the following: Black body radiation – Planck's concept of quantization (derivation not required). Photoelectric effect. Hydrogen spectrum. Bohr's theory and its failures – Wave particle duality and uncertainty principle – Significance of these microscopic entities Emergence of Quantum mechanics.

B.Operators: Operators algebra – Commutation of operators, linear operators. Complex functions. Hamiltonian operators. Operators ∇ and ∇^2 . Eigen functions and Eigen values. Degeneracy. Linear

combination of Eigen functions of an operator, well behaved functions. Normalized and orthogonal functions.

C. Postulates of Quantum mechanics. Physical interpretation of wave function. Observables and operators. Measurability of properties. Average value of observable. The time dependent and time independent Schrodinger equation.

UNIT – IV: CHEMICAL KINETICS – I : 15 Hours

A. Theories of reaction rates – Collision theory, steric factor. Theory of Absolute Reaction Rates – Reaction coordinate, activated complex and the transition state. Thermodynamic formulation of reaction rates.

B. Unimolecular reactions – Lindemann's theory – Brief explanation of HKRR and Slater's treatments. Termolecular reactions. Complex reactions – Rate expressions for opposing, parallel and consecutive reaction (all first order type).

C. Chain reactions: General Characteristics, Steady State treatment $H_2 - I_2$, $H_2 - Br_2$, $H_2 - Cl_2$ reactions. Comparison of hydrogen halogen reactions. Rate expressions for chain reactions.

References:

1. Thermodynamics for Chemists by S. Glasstone.
2. Atkin's Physical Chemistry by Peter Atkins and Julio de Paula.
3. Introduction to Electrochemistry by S. Glasstone.
4. Quantum Chemistry by Ira N. Levine.
5. Introduction to Quantum Chemistry by A.K. Chanda.
6. Chemical Kinetics by K.J. Laidler.
7. Atomic Structure and chemical bond by Manas Chandra.

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M Sc., ORGANIC CHEMISTRY (OC)/NATURAL PRODUCTS (NP)
I SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2013-2014)
CHEM-OC/NP: 104: PAPER-IV CHEMICAL GROUP THEORY AND
SPECTROSCOPY

UNIT: I: CHEMICAL GROUP THEORY

**UNIT: II: FUNDAMENTALS OF SPECTROSCOPY & MICROWAVE
SPECTROSCOPY**

UNIT: III: ELECTRON SPIN RESONANCE SPECTROSCOPY

UNIT: IV: MOSSBAUER SPECTROSCOPY

UNIT- I: CHEMICAL GROUP THEORY: 15Hours

Symmetry elements and symmetry operations; Point groups; Mathematically requirements for a point group; Schoenflies notations of point groups; Systematic assignment of molecules to point groups; Group generating elements; sub-groups; Classes; Matrix representation of C_{2V} , C_{3V} and C_{4V} point groups; Reducible and Irreducible representations (IR), Character of a matrix, character of a matrix, characters of conjugate matrices; Character of a representation; Properties of Irreducible representation; construction of Character tables(C_{2V} and C_{3V} point groups); Mullikan symbolism rules for IR's; The standard reduction formula: The direct product; Symmetry of normal modes of molecules (C_{2V}).

UNIT- II: FUNDAMENTALS OF SPECTROSCOPY & MICROWAVE

SPECTROSCOPY: 15Hours:

Electromagnetic radiation – Interaction of electromagnetic radiation with matter- Absorption and Emission. Quantization of energy- Regions of the electromagnetic spectrum and the mode of interactions with molecules. Representation of spectra. Basic components of a spectrometer. Signal to noise ratio. Intensity and width of spectral lines.

MICROWAVE SPECTROSCOPY: Classification of rotating molecules- Diatomic molecules- rigid rotor mode. Intensity of spectral lines. Effect of isotopic substitution on transition frequencies, intensities, non rigid rotor, polyatomic molecules- Spectra of linear and symmetric top molecules. Selection rules. Techniques and Instrumentation. Stark Effect, Nuclear and

Electron spin interactions and effect of External field. Applications: calculation of bond lengths in diatomic molecule

UNIT- III: ELECTRON SPIN RESONANCE SPECTROSCOPY: 15 Hours

Basic Principles, Theory of ESR, Comparison of NMR & ESR. Instrumentation, Factors affecting the 'g' value, determination of 'g' value. Isotropic and Anisotropic constants. Splitting hyper fine splitting coupling constants. Line width, Zero field splitting and Kramer degeneracy. Crystal field splitting, Crystal field effects.

Applications:- Detection of free radicals; ESR spectra of (a) Methyl radical ($\text{CH}_3^\cdot$), (b) Benzene anion (C_6H_6^-) (c) Isoquinine (d) $[\text{Cu}(\text{H}_2\text{O})_6]^{+2}$ (e) $[\text{Fe}(\text{CN})_5\text{NO}]^{-3}$ (f) Heme proteins, Kinetic studies, Detection of oxidation states of the metal. ELDOR, ENDOR, Spin labeling ESR Spectroscopy.

UNIT-IV: MOSSBAUER SPECTROSCOPY: 15 Hours

Principles of Mössbauer spectroscopy, Resonance line shifts or isomer shift, Quadrupole interactions and Magnetic interactions. Instrumentation, Lamb Mössbauer factor, presentation of spectrum, Selection rules. Applications: Low spin, high spin Fe(II) and Fe(III) complexes, diamagnetic and covalent compounds, biological systems, Investigation of dithiocarbamate and Ruthenium complexes, structure determination of $\text{Fe}_3(\text{CO})_{12}$, Nature of chemical bond, detection of oxidation state, Applications Mossbauer spectroscopy to Tin and Iron compounds.

References:

1. Molecular Structure and Spectroscopy- G. Aruldas, Prentice Hall of India Pvt. Ltd, New Delhi, 2001.
2. Modern Spectroscopy- J.M. Hoilas, John Willey
3. Introduction to Molecular Spectroscopy- G.M. Barrow, Mc Graw Hill.
4. Electron Spin Resonance Elementary Theory and Practical Applications- John E. Wertz and James R. Bolton, Chapman and Hall, 1986.
5. Spectroscopic Identification of organic compounds – Silverstein, Basseler and Morrill.
6. Organic Spectroscopy- William Kemp.
7. Fundamentals of Molecular Spectroscopy- C.N.Banwell and E.A. Mc cash 4th Edition, Tata Mc Graw Hill Publishing Co., Ltd. 1994.
8. Application of Mössbauer Spectroscopy – Green Mood.
9. NMR, NQR, EPR and Mössbauer Spectroscopy in inorganic chemistry – R.V Parish, Ellis, Harwood.

10. Molecular Structure and Spectroscopy – G. Aruldas, Prentice Hall of India Pvt.Ltd, New Delhi, 2001.
11. Mössbauer Spectroscopy – N.N. Greenwood and T.C. Gibb, Chapman, and Hall, London 1971.
12. Coordination Chemistry: Experimental Methods- K. Burger, London Butter Worths, 1973.
13. Analytical spectroscopy – Kamlesh Bansal, Campus books, 2008.
14. Structural Inorganic Chemistry Mössbauer Spectroscopy – Bhide.
15. Principle of Mössbauer Spectroscopy – T.C. Gibb, Chapman, and Hall, London 1976.

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M Sc., ORGANIC CHEMISTRY (OC)
II SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
CHEM-OC/NP: 201: PAPER-I INORGANIC CHEMISTRY –II

UNIT –I: REACTION MECHANISMS OF COMPLEXES

UNIT–II: ELECTRONIC SPECTRA OF TRANSITION METAL COMPLEXES

UNIT-III: METAL-CARBONYL CLUSTERS

UNIT-IV: BIOINORGANIC CHEMISTRY

UNIT-I REACTION MECHANISMS OF COMPLEXES: 15Hours

Reactivity of metal complexes, inert and labile complexes, Kinetics and mechanisms of substitution reactions, kinetics of substitutions reactions in octahedral complexes, acid hydrolysis, Factors affecting acid hydrolysis, Base hydrolysis, Conjugate base mechanism, Anation reactions, substitution reactions in square planar complexes, Trans effect, Mechanism of trans effect, Electron transfer reactions, inner sphere and outer sphere mechanisms, Marcus theory.

UNIT-II: ELECTRONIC SPECTRA OF TRANSITION METAL COMPLEXES: 15Hours

Free Ion terms and Energy Levels: Configurations, Terms, States and Microstates, calculation of Microstates for P^2 and d^2 Configuration, L-S (Russell- Saunders) Coupling Schemes, J-J Coupling scheme, derivation of terms for P^2 and d^2 configuration. Hole Formulation, Energy ordering of terms (Hund's Rules), Selection rules: Laporte orbital selection rule, spin selection rules. Splitting of energy levels and spectroscopic states Orgel diagrams of d^1 to d^9 metal complexes. Interpretation of electronic spectra of aquo Complexes of Ti(III), V(III), Cr(III), Mn(II), Fe(II), Fe(III), Co(II), Ni(II) and Cu(II). Calculation of interelectronic and spectral parameters for d^8 metal complexes. Tanabe- Sugano diagrams for d^2 and d^6 octahedral complexes. Charge transfer ($L \rightarrow M$ and $M \rightarrow L$) spectra of metal complexes.

UNIT-III : METAL-CARBONYL CLUSTERS : 15Hours

Anionic and hydrido clusters . Low nuclearity clusters (LNCCs) (Triatomic and tetra atomic). Isoelectronic and isolobal relationships. Structural patterns of high nuclearity carbonyl clusters (HNCCs) Electron counting Schemes of HNCCs- Wades rules. The capping rule. HNCCs of the Fe, Ru, and Os group. HNCCs of Co, Rh and Ir group, HNCCs Ni, Pd and Pt; Octahedral metal halide and chalcogenide clusters , Chevrel phases, compounds with M-M multiple bonding, Major structural types (Edge sharing bi-octahedra, face sharing bi-octahedra, tetragonal prismatic and trigonal antiprismatic structure)-Quadruple bond, One dimensional solids

UNIT-IV BIOINORGANIC CHEMISTRY : 15Hours

- i) Essentials and trace elements in biology: Classification, concept of essential, Evolution of essential trace elements, Role of Bulk (structural) elements and minerals, working of essential trace elements, Deficiency signs and specific function of essential trace elements (Fe, Cu, Co, Ni, Zn, F, I, Se). Antagonism and synergism among essential trace elements.
- ii) Oxygen uptake proteins Structural and functional aspects of Hemoglobin(Hb), Myoglobin(Mb), Hemocyanin(Hc) and Hemocyanine(Hc). Oxygen binding curves for Hb and Mb, structure-function relationships.
- iii) Photosynthesis: Structure of Chlorophyll, photosynthesis in bacteria and in green plants (Z-scheme involving PS I & PS II).

References:

1. Symmetry and Spectroscopy of Molecules, by K. Veera Reddy, New Age International Publishers, New Delhi, 1998.
2. Concise Inorganic Chemistry by J. D. Lee, ELBS, 4th edition, 1994.
3. Advanced Inorganic Chemistry by F.A. Cotton and G. Wilkinson, 5th Edn., John Wiley and Sons, New York.
4. Inorganic Chemistry by J. E. Huheey, E.A. Keiter and R.A. Keiter, 4th edition, Addison Wesley Publishing Company, New York, 2000.
5. Bioinorganic Chemistry, R.W. Hay, Ellis Horwood Ltd., Chichester, New York. 1984.
6. Bioinorganic Chemistry, K. Hussain Reddy, New Age International Publishers, New Delhi, 2003.
7. Reaction Mechanism of metal complexes, Robert W. Hay, Harwood Publishers, Chichester, England, 2000.
8. Inorganic Reaction Mechanisms, M.L. Toba and John Burgess, Addison Wesley, Longman, 1999.
9. Mechanism of Reactions in transition metal sites, Richard A. Henderson, Oxford Science Publications, London, 1993.

10. Kinetics and Mechanisms of Reactions of Transition metal complexes, R.G. Wilkins, 2nd Ed., V.C.H. Publications, 1991.
11. Mechanisms of Inorganic Reactions, F. Basalo and R.G. Pearson, Wiley Easter, 2nd Ed., 1997.
12. Inorganic Electronic Spectroscopy by A. B.P. Lever Elsevier.

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FIRST YEAR M.Sc. CHEMISTRY

M Sc., ORGANIC CHEMISTRY (OC)

II SEMESTER SYLLABUS

(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)

CHEM-OC/NP: 202: PAPER-II ORGANIC CHEMISTRY –II

UNIT – I: PERICYCLIC REACTIONS

Unit—II: REAGENTS OF SYNTHETIC IMPORTANCE

(OXIDATIONS & REDUCTIONS)

Unit—III: CONFORMATIONAL ANALYSIS OF ACYCLIC SYSTEMS

Unit—IV: HETEROCYCLIC COMPOUNDS

UNIT – I: PERICYCLIC REACTIONS : 15Hours

Molecular orbital symmetry. Frontier orbitals of ethylene, 1,3-butadiene, 1,3,5-hexatriene. Classification of pericyclic reactions. Woodward – Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions – conrotatory and disrotatory motions. $4n$, $4n + 2$. Cyclo additions – antarafacial and suprafacial additions, $4n$, and $4n + 2$.

Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatropic shifts involving carbon moieties, 3,3-sigmatropic rearrangements. Claisen, cope and aza-Cope rearrangements.

Unit—II: REAGENTS OF SYNTHETIC IMPORTANCE (OXIDATIONS & REDUCTIONS) : 15Hours

- (a) Oxidations: (i) Alcohols to carbonyls: Cr(VI) oxidants, Swern oxidation, SilverCarbonate.
- (ii) Prevost and Woodward oxidation. (iii) Oxidations of allylic and benzylic C-H bonds: DDQ and SeO_2 .
- (b) Reductions : (i) Catalytic hydrogenation: Homogeneous hydrogenation-Use of Wilkinsons catalyst. (ii) Dissolving metal reductions including Birch reduction. (iii) Nucleophilic metal

hydrides : LiAlH_4 , NaBH_4 , and their modifications. Electrophilic metal hydrides : BH_3 , and AlH_3 . (iv) Hydrogenolysis, use of tri-n-butyltin hydride.

- (c) Organometallic reagents: Preparation and application of the following in organic synthesis :
(i) Organo lithium and Organo copper reagents. (ii) Organo boranes in C—C bond formation.

Unit—III: CONFORMATIONAL ANALYSIS OF ACYCLIC SYSTEM: 15Hours

Introduction to conformational isomerism and the concept of dynamic stereochemistry, Study of conformations in ethane and 1,2-disubstituted ethane derivatives like butane, dihalobutane, halohydrin, ethylene glycol, butane-2,3-diol, amino alcohols and 1,1,2,2-tetrahalobutanes. Klyne-Prolog terminology for conformers and torsion angles. Conformations of unsaturated acyclic compounds (1-butene, propionaldehyde and butanone). Conformational diastereoisomers and conformational enantiomers. Factors affecting the conformational stability and conformational equilibrium-attractive and repulsive interactions. Use of physical and spectral methods in conformational analysis.

Conformational effects on the stability and reactivity of acyclic diastereoisomers-steric and stereo electronic factors-examples. Conformation and reactivity. The Winstein-Holness equation and the Curtin-Hammett principle.

Unit—IV: HETEROCYCLIC COMPOUNDS: 15Hours

Importance of heterocyclic compounds as drugs. Nomenclature of heterocyclic systems based on ring size, number and nature of hetero atoms. Synthesis and reactivity of Indole, Benzofuran, Benzothiophene, Quinoline, Isoquinoline, Coumarin, Chromone, and Acridine.

References:

1. Conservation of orbital symmetry by Woodward and Hoffmann
2. Organic reactions and orbital symmetry by Gilchrist and Storr
3. Pericyclic reactions—a problem solving approach by Lehr and Merchand
4. Pericyclic reactions by Mukherjee
5. Mechanism and structure in organic chemistry by S, Mukherjee
6. Some modern methods of organic synthesis by W. Carruthers
7. Guide book of organic synthesis by R. K. Meckie, D. M. Smith & R. A. Atken
8. Reagents in organic synthesis by B. P. Munday and others
9. Organic synthesis by O. House
10. Organic synthesis by Michael B. Smith
11. Reagents for organic synthesis by Fieser & Fieser, Vol. 1-11 (1984)

12. Hand book of reagents for organic synthesis by Reich and Rigby Vol. I & IV
13. Organic Synthesis by Robert E Ireland
14. The third dimension in organic chemistry by Alan Bassindale
15. Stereochemistry of carbon compounds by Ernest L. Eliel
16. Stereochemistry by V. M. Potapov
17. Stereochemistry of Organic compounds- Principles and Applications by D. Nasipuri
18. Stereochemistry, Conformational and Mechanism By P. S. Kalsi.
19. Heterocyclic chemistry, T. L. Gilchrist, Longman UK Ltd., London(1985)
20. Heterocyclic chemistry, 3rd Edn. J. A. Joule, K. Mills and G. F. Smith, Stanley Thornes Ltd., UK, (1998)
21. The Chemistry of Indole, R. J. Sunderberg, Academic Press, New York (1970)
22. Benzofurans, A. Mustafa, Wiley- Interscience, New York (1974)

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M Sc., ORGANIC CHEMISTRY (OC)
II SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
CHEM-OC/NP: 203: PAPER-III PHYSICAL CHEMISTRY –II

UNIT – I: THERMODYNAMICS – II

UNIT – II: ELECTRO CHEMISTRY – II

UNIT – III: QUANTUM CHEMISTRY – II

UNIT – IV: CHEMICAL KINETICS – II

UNIT – I: THERMODYNAMICS – II: 15Hours

- A. Phase equilibria: Equilibrium between two phases of one component. The Clapeyron equation. The Clausius Clapeyron equation. Applications. Integrated form of Clapeyron equation.
- B. Phase rule: Thermodynamic derivation of phase rule – Systems of two components. Simple eutectic. Azeotropes. Thermal analysis. Three component systems (Two salts and water). Roozeboom plots.
- C. The equilibrium constant: Equilibrium in homogeneous gaseous systems. Free energy change in chemical reactions. Vant' Hoff's reaction isotherm. Integrated form. Direction of chemical change. Determination of Standard free energies.

UNIT – II: ELECTRO CHEMISTRY – II: 15Hours

- A. Concept of activity and activity coefficient of an electrolyte. The mean ionic activity coefficient. Calculation of mean ionic activity coefficients. Debye Huckel theory of solutions. Debye Huckel Limiting law and its verification.

- B. Electrode polarization – Decomposition potential and over voltage. Influence of C.D. on over voltage. Influence of P^H on over voltage, influence of temperature on over voltage – Theories of over – voltage. Hydrogen over – voltage.
- C. The Deposition and corrosion of metals: Physical nature of electrodeposited metals – 1) Current density 2) Concentration of electrolyte 3) Temperature 4) Colloidal matter 5) Electrolyte 6) Basis metal. Throwing power separation of metals by electrolysis. Electrochemical passivity. Theories of passivity. Corrosion of metals. Hydrogen evolution type.

UNIT – III: QUANTUM CHEMISTRY – II: 15Hours

- A. Particle in a box. One dimensional and three dimensional. Plot of Ψ and Ψ^2 – Discussion. Degeneracy of energy levels. Comparison of classical and quantum mechanical particles. Calculations using wave functions of the particle in a box – Normalisation and orthogonality, measurability of energy, position momentum, average values and probabilities. Application of the spectra of conjugated molecules.
- B. Schrodinger equation for the Hydrogen atom – Separation of variables. Quantum numbers n , l and m . Hydrogen like wave functions. Complete wave function angular and radial functions. Radial distribution functions. Hydrogen like orbitals and their representation – Polar plots, Contour plots and boundary diagrams.

UNIT – IV: CHEMICAL KINETICS – II: 15Hours

- A. Homogeneous catalysis. Mechanism of catalysis. Equilibrium treatment. Steady state treatment. Acid base catalysis: Mechanism of acid base catalysis. Catalysis by enzymes. Influence of P^H . Micholish – Menton law. Influence of temperature. Examples. Decomposition of acetaldelyde catalysed by Iodine. Catalysed decomposition of hydrogen peroxide.
- B. Free radicals in chemical reactions. Hydrogen oxygen reaction. Upper and lower explosion limits. Heterogeneous reactions. Bimolecular reactions. Adsorption. Langmuir adsorption isotherm. Electronic theories of chemisorption and heterogeneous catalysis.
- C. Introduction to enzyme catalysis. Michales – Menton Kinetics – Effect of pH and effect of temperature on the rates of enzyme reactions.

References:

1. A Text Book of Thermodynamcis by Rajaram and Kuriakose.
2. Thermodynamics for Chemistry by S. Glasstone.
3. Text Book of Physical Chemistry by Levine.
4. Electrochemistry by S. Glasstone.
5. Quantum Chemistry by Hanna.
6. quantum Chemistry by A.K. Chandra
7. Chemical Kinetics by K.J. Laidler.

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M Sc., ORGANIC CHEMISTRY (OC)
II SEMESTER SYLLABUS
(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
CHEM-OC/NP: 204: PAPER-IV: ENVIRONMENTAL CHEMISTRY (60 hrs.)

UNIT: I: HYDROSPHERE

UNIT: II: ATMOSPHERE

UNIT: III: ENVIRONMENTAL TOXICOLOGY AND GREEN CHEMISTRY

UNIT: IV: ENVIRONMENTAL MONITORING METHODS

UNIT: I: HYDROSPHERE: 15 Hours

Introduction to Chemical composition of Environment- Bio distribution of elements Chemical composition of water bodies- lakes, streams, rivers and wet lands, Hydrological cycle. Aquatic pollution, inorganic, organic pesticides, agricultural, industrial and sewage, detergents. oil spills and oil pollutants, Water quality parameters,- DO, COD, BOD. Solids, metals, Contents of Chloride, sulphate, phosphate nitrate and micro organisms. Analytical methods of measuring BOD, DO, COD, Metals (As, Cr, Cd, Hg, Pb, Se) residual chloride and chlorine demand. Purification and treatment of water.

UNIT: II: ATMOSPHERE: 15 Hours

Chemical composition of Atmosphere- particles, ions and radicals and their formation, Chemical and photochemical reactions in atmosphere, smog formation, Oxides of N,C,S and their effects, pollution by chemicals, petroleum and minerals, chlorofluorocarbons, Green House effect, Chemical reaction in ozone depletion, Acid rain, Analytical methods for measuring air pollutants, Air pollution monitoring. Air pollution control methods.

UNIT: III: ENVIRONMENTAL TOXICOLOGY AND GREEN CHEMISTRY: 15 Hours

(a) Toxicological Chemistry: Introduction to toxicological chemistry, dose

response relationship, relative toxicities. Teratogenesis, mutagenesis, carcinogenesis, Immune system effects, Health hazards, Toxic elements and elemental forms, Toxic inorganic compounds, Toxicology of organic compounds, Effect of Toxic chemicals on enzymes, biochemical effects of As, Cd, Hg and Oxides of Sulphur and nitrogen.

(b)Green Chemistry: Definition of Green Chemistry, Principles of Green Chemistry, Experimental systems. This measurement of greenness environmental factor, Historical approach, tools of green Chemistry, Catalysis and bio-catalysis of Green Chemistry, examples of Green Chemistry, Pharmaceutical industry and Green Chemistry, Pesticides, Solvents, Green Chemistry, Sugar and distilleries, wastes and future trends in Green Chemistry.

UNIT: IV: ENVIRONMENTAL MONITORING METHODS:

(a) Monitoring of Air pollutants: Analysis of gaseous pollutants –SO₂, H₂S, NO, NO_x, NH₃, CO, CO₂, Ozone, organic gases and vapours. Continuous monitoring of air pollutants –principles, monitoring instruments, monitoring of SO₂, H₂S, NO-NO_x, CO, CO₂, hydrocarbons ozone suspended particulate matter, chemical and photo chemical reactions in atmospheres.

(b) Monitoring of water pollutants: Analysis of polluted water samples using AAS, HPLC and ICP methods

REFERENCE BOOKS:

1. Environmental Chemistry by Moore & Moore.
2. Environmental Chemistry by Mahanan, VIth Edition, Lewis Publications.
3. Environmental Chemistry by B.K.Sharma. Goel Publications.
4. Environmental Chemistry by Ohra & Thyogi.
5. Environmental Chemistry by Benrgia.
6. Environmental Pollution and control in chemical process and industries by S.K.Bhatia.
7. Environmental Pollution by S.S. Dara.
8. Environmental Pollution analysis by S.M.Khopkar.
9. Industrial chemistry by B.K Sharma;Goel Publications
10. Introduction to Nanoscale Science.and Technology(ed)Massimiliano D. Ventra (kluwer academic).

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CHOICE BASED CREDIT SYSTEM
FIRST YEAR M.Sc. CHEMISTRY
M Sc., ORGANIC CHEMISTRY (OC)
(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
FIRST YEAR INORGANIC CHEMISTRY LAB COURSE
Under CBCS

FIRST YEAR (Total Marks 100)

FIRST SEMESTER

Qualitative semi micro Inorganic analysis:

Semi micro qualitative inorganic mixture analysis containing four cautions. The analysis involves identification and confirmation of cations containing the less familiar rare elements such as Tungsten, Molybdenum, Zirconium, Thorium, Titanium, Uranium, Cerium, Vanadium, Lithium, Berkelium Etc...

(A minimum of 4 mixtures are to be analyzed)

SECOND SEMESTER

Quantitative Inorganic analysis:

- A. 1. Estimation of zinc in presence of copper
2. Estimation of nickel by gravimetry using DMG

B. Preparations of Inorganic Complexes

1. Preparation of tetra ammine Cu (II) sulfate
2. Preparation of Hexa ammine Ni (II) chloride.
3. Preparation of Potassium tri Oxalato Chromate (III)
4. Mercuric tetrathiocyanato Cobaltite (II)

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FIRST YEAR ORGANIC CHEMISTRY LAB COURSE
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FIRST YEAR (Total Marks 100)

I) Laboratory techniques (For Demonstration Purpose only), Determination of Melting Point /Boiling Point, Ordinary Distillation, Vacuum distillation/filtration, Recrystallization, Drying of Organic Compounds, TLC analysis, Column Chromatography.

II) Qualitative Systematic Analysis of single Organic compound,

III) Preparation of single step organic compounds

- i) Aspirin from salicylic acid (Acetylation)
- ii) β -naphthylmethylether (Methylation)
- iii) Iodoform
- iv) Diels-Alder Reaction

SECOND SEMESTER LAB COURSE

I) Separation of two component mixtures by chemical methods and their identification by chemical reactions. Separation by using solvent water, Ether, 5% aq. sodium bicarbonate, aq. 5% sodium hydroxide, and 5% aq. hydrochloric acid solutions. Identification of each compound by a systematic study of the physical constants M.P/B.P, extra elements (Nitrogen, Halogen), Solubility, Functional groups and preparation of crystalline derivatives

Note: As minimum of 5 mixtures should be separated and analyzed by these procedures

II) Multi step synthesis of Organic compounds

- i) Beckmann rearrangement : Benzophenone $\rightarrow$ Benzophenone oxime $\rightarrow$ Benzanilide

ii) Benzilic acid rearrangement : Benzoin → Benzil → Benzilic acid

iii) Acetylation: Aniline → Acetanilide → Parabromo Acetanilide

Perkin Reactions : Preparation of Cinnamic acid

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(EFFECTIVE FROM THE ACADEMIC YEAR 2015-2016)
FIRST YEAR PHYSICAL CHEMISTRY LAB COURSE
Under CBCS

FIRST SEMESTER (Total Marks 100)

Instrumental methods of Analysis

Conductometry

Titration of strong acid vs strong base (HCl vs NaOH)

Titration of weak acid vs strong base (AcOH vs NaOH)

Titration of mixture of acids (HCl + AcOH) Vs strong base (NaOH)

Potentiometry

Titration of a strong acid vs strong base (HCl vs NaOH)

Titration of weak acid vs strong base (AcOH vs NaOH)

Redox titration (Fe^{2+} Vs $\text{K}_2\text{Cr}_2\text{O}_7$)

Colorimetry

Determination of wavelength of maximum absorbance of a colored solution

Verification of Beers Lambert's law and estimation of given unknown.

SECOND SEMESTER

Distribution

Distribution of acetic acid between n-butanol and water.

Distribution of iodine between CCl_4 and water.

Distribution of benzoic acid between Benzene and water & to prove dimerization of benzoic acid in benzene.

Chemical Kinetics

Acid catalysed hydrolysis of methyl acetate & to determine the relative strengths of acids.

Rast's Method

Determination of cryoscopic constant using known solute.

Determination of molecular weight of unknown nonvolatile solute.

Adsorption

Adsorption of acetic acid or Oxalic acid on the surface of charcoal and verification of Freundlich

Adsorption isotherm

Critical Solution Temperature (CST)

Determination of CST of Phenol water System

Effect of Neutral Salt on CST

M.A English**KVR GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)****KURNOOL****MA in English****Syllabus with Effect from 2015-2016****SEMESTER-I****PAPER 1.1: POETRY-I**

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1.. Geoffrey Chaucer	The Prologue to the Canterbury Tales
	(Portraits of the Knight, the Nun, the Friar, the Clerk, the Wife of Bath)

UNIT-II

2. John Donne	Canonization
	A Valediction: Forbidding Mourning
3. John Milton	Paradise Lost Book- IX

UNIT-III

4. William Wordsworth	Tintern Abbey
	Ode on the Intimations of Immortality
5. S.T. Coleridge	The Rime of the Ancient Mariner

UNIT-IV

6. P.B. Shelley	To a Skylark

	Ode to the West Wind
7. John Keats	Ode to a Nightingale
	Ode on a Grecian Urn

PAPER 1.2: DRAMA-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Sophocles	Oedipus Rex

UNIT-II

2. Christopher Marlowe	Dr. Faustus

UNIT-III

3. William Shakespeare	Hamlet
4. William Shakespeare	As You Like It

UNIT-IV

5. William Congreve	The Way of the World
6. Oscar Wilde	The Importance of Being Earnest

PAPER 1.3: NOVEL-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Henry Fielding	Joseph Andrews

UNIT-II

2. Jane Austen	Pride and Prejudice
3. Charles Dickens	Hard Times

UNIT-III

4. George Eliot	Mill on the Floss

UNIT-IV

5. Thomas Hardy	Tess of the D'Urbervilles
6. Albert Camus	The Outsider

PAPER 1.4: INDIAN ENGLISH LITERATURE-I

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. A.K. Ramanujan	Love Poem for a Wife 1 Small Scale Reflections on a Great House Obituary (<i>Ten Twentieth Century Indian Poets</i> , OUP)
2. Jayanta Mahapatra	Grass Lost

UNIT-II

3. Kamala Das	An Introduction My Grandmother's House (<i>Ten Twentieth Century Indian Poets</i> , OUP)
4. Gauri Deshpande	The Female of the Species Elegy for a Friend

UNIT-III

4. Nissim Ezekiel	Night of the Scorpion Poet, Lover, Birdwatcher

UNIT IV

5. Girish Karnad	Hayavadana
6. Manjula Padmanabhan	Harvest

PAPER 1.5: PHONETICS AND GRAMMAR

UNIT-I

1. The Speech Mechanism
2. English Vowels
3. English Consonants

UNIT-II

4. Word Accent
5. Accent and Rhythm in Connected Speech
6. Phonological Environment: Assimilation, Elision, Juncture
7. Intonation

UNIT-III

The following chapters from *A Student's Grammar of the English Language* by Sidney Greenbaum and Randolph Quirk:

Chapter1. Varieties of English

Chapter2. Some Major Concepts and Categories

Chapter3. Verbs and auxiliaries

UNIT-IV

The following chapters from *A Student's Grammar of the English Language* by Sidney Greenbaum and Randolph Quirk:

Chapter4. The semantics of the verb phrase

Chapter5. Nouns and determiners

Chapter10. The simple sentence

Reference

1. A.C. Gimson *An Introduction to the Pronunciation of English*
2. J. Sethi and P.V. Dhamija *A Course in Phonetics and Spoken English*
3. Daniel Jones *English Pronouncing Dictionary* (18th Edition)
Ed. Peter Roach, Jane Setter, and Jane Esling

SEMESTER-II

PAPER 2.1: POETRY-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Alfred Tennyson *Ulysses*
2. Robert Browning *My Last Duchess*

UNIT-II

3. Matthew Arnold *Dover Beach*
4. G.M. Hopkins *The Windhover*
Pied Beauty

UNIT-III

5. W.B. Yeats *The Second Coming*
An Irish Airman Foresees His Death
6. T.S. Eliot *The Waste Land*

UNIT-IV

7. W.H. Auden *The Shield of Achilles*
8. Dylan Thomas *A Grief Ago*
9. Philip Larkin *Church-Going*
10. Ted Hughes *The Thought-Fox*

PAPER 2.2: DRAMA-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Henrik Ibsen	A Doll's House
2. J.M. Synge	Riders to the Sea

UNIT-II

3. G.B. Shaw	St. Joan
4. T.S. Eliot	Murder in the Cathedral

UNIT-III

5. Samuel Beckett	Waiting for Godot
6. John Osborne	Look Back in Anger

UNIT-IV

7. Harold Pinter	The Birthday Party
8. Tom Stoppard	Rosencrantz and Guildenstern are Dead

PAPER 2.3: NOVEL-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Joseph Conrad	Heart of Darkness
2. D.H. Lawrence	Sons and Lovers

UNIT-II

3. James Joyce	A Portrait of the Artist as a Young Man
4. Hermann Hesse	Siddhartha

UNIT-III

5. Virginia Woolf	Mrs. Dalloway
6. Graham Greene	The Power and the Glory

UNIT-IV

7. William Golding	Lord of the Flies
8. Margaret Drabble	The Waterfall

PAPER 2.4: INDIAN ENGLISH LITERATURE-II

Background Study: Literary History-Genres-Movements-Ideas-Trends-Concepts

UNIT-I

1. Mulk Raj Anand	Untouchable
2. Raja Rao	Serpent and the Rope

UNIT-II

3. Salman Rushdie	Midnight's Children
4. R.K. Narayan	The Guide

UNIT-III

5. Bharati Mukherjee	Jasmine
6. Jhumpa Lahiri	The Wayland

UNIT-IV

7. Sri Aurobindo	The Renaissance in India
8. M.K. Gandhi	My Experiments with Truth

PAPER 2.5: HISTORY OF THE ENGLISH LANGUAGE

UNIT-I

1. Grimm's Law and Verner's Law
2. Ablaut
3. Umlaut
4. The Great Vowel Shift

UNIT-II

3. Foreign Influences: Latin, French, Scandinavian
4. Makers of English: The Bible, Shakespeare

UNIT-III

5. Word Formation
6. Change of Meaning

UNIT-IV

7. The Rise of Standard English
8. Spelling Reform
9. British English and American English
10. Indian English

Reference

1. H.C. Wyld	<i>A Short History of English</i>
2. Albert C. Baugh	<i>A History of the English Language</i>
3. Stuart Robertson and Frederic G. Cassidy	<i>The Development of Modern English</i>

4. F.T. Wood

*An Outline History of the English
Language*

M.Com Commerce

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**SYLLABUS FOR FIRST YEAR M.COM PROFESSIONAL FOR THE ACADEMIC
YEAR 2015-16**

SEMESTER – I

PAPER - I: BUSINESS ECONOMICS

Time: 3 Hours

No of hours per week: 5

INTERNAL=25

SEMESTER=75

TOTAL=100

Objective: The objective of this paper is to impart conceptual and practical knowledge of business economics.

UNIT I –Introduction to business Economics: Nature and Scope - Significance of Economics for Management - Objectives of the Firm – Role and responsibility of managerial economist; Fundamental economic Concepts: incremented principle, opportunity cost principle, Discounting principle and Equi-Marginal Principle.

UNITII -Demand Analysis and supply analysis:

Concept – Determinants of Demand – types of Demand - Law of Demand –Elasticity of Demand – its meaning, Importance of Elasticity of Demand types of elasticity- Price, income and cross elasticity of demand- Demand Forecasting ; Supply:- Law of supply- Determinants of supply

UNIT III – Cost Analysis and Production Analysis

Cost Concepts – cost classification- cost Determinants – Cost-output relationships in short run and long run; Cost control and cost reduction; factors Hampering cost control in India Meaning and Definition of Production Function – Law of marginal utility, Law of returns to scale and Law of Variable Proportions- Production function with One, Two and all variable input factors- Cobb-Douglas Production Function.

UNIT IV –Profit and Price Analysis:

Nature of Profit - kinds of Profit Theories of profit- Price determinates in different market situation; Perfect competition, Monopolistic competition, Monopoly, Price discrimination and Oligopoly- Pricing strategies; Pricing Methods- Product Line Pricing- Transfer Pricing- Pricing by Retailers – Export Pricing-Dual Pricing – Administered Pricing

UNIT V- Trade cycles

Trade cycles-Meaning-Phases-Consequences-Remedies

Suggested Readings:

1. Mithani, D.M., Managerial Economics, Himalaya Publishing House, New Delhi
2. Mehta, P.L., Managerial Economics, Text and Cases, S.Chand Company publishers, New Delhi
3. Varshney, RL, and Maheswari, K.L., Managerial Economics, S. Chand Publishers, New Delhi
- 4.Dwivedi, D.N., Managerial Economics, Vikas Publishing House Pvt. Ltd.,

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**SYLLABUS FOR FIRST YEAR M.COM PROFESSIONAL FOR THE ACADEMIC
YEAR 2015-16**

SEMESTER - I

PAPER - II: BUSINESS ENVIRONMENT & GOVERNMENT POLICY

EXTERNAL MARKS: 75

No of hours per week: 5

Max time: 3 Hours

INTERNAL MARKS: 25

Objective: The objective of the course is to equip student with prevailing business environment and government policy in the country.

Unit I: Introduction to Business Environment:

Concept, Significance and Nature of business Environment- Internal and External Environment-
Changing Dimensions of Business Environment – Techniques of Environmental Scanning and
Monitoring

Unit II: Business Policy:

Government Policies- Industrial Policy 1948, 1956, 1991, Industrial policy reforms after 2001 Fiscal
Policy- Monetary Policy- EXIM Policy- Economic Reforms, Liberalization and Structural Adjustment
Programmers.

Unit III - Economic Environment of Business: Significance and Elements of Economic Environment -
Economic system and Business Environment – Economic Planning in India - Public Sector and Economic
Development - Development Banks and Relevance to Indian Business

UNIT IV: Political and Legal Environment:

Changing Dimensions of Legal Environment in India - MRTP Acts - FEMA and Licensing - Consumer
Protection Act - Political Institutions - Reasons for State Intervention - Types and Extent of Intervention

UNIT V: Socio-Cultural Environment: Critical elements of socio-cultural environment –
social institutions and systems – social values and attitudes- social groups- Middle class-
Dualism in India Society and problems of uneven income distribution- Emerging rural sector in
India- India business system – social responsibility of business- Consumerism in India.

References:

- Adhikary, M: Economic Environment Business, Sultan Chand & Sons, New Delhi.
- Ahluwalia, I.J: Industrial Growth in India, Oxford University press, New Delhi.
- Alagh, Yoginder K: Indian Development policy, Vikas pun. New Delhi.
- Aswathappa.K. Legal Environment of Business, Himalaya publishcation, Delhi.

SEMESTER –I

Paper - III: QUANTITATIVE TECHNIQUES

Internal Marks: 25

No. of Hours per Week: 5

Exam Duration: 3Hrs

External Marks: 75

Objective: To provide a conceptual understanding of statistical techniques applied for business decisions

UNIT:I: - Measures of Relationship :-

Measures of Relationship –Karl Pearson's- co-efficient of correlation- Regression Analysis.
(Theory & Problems)

UNIT: II: - Probability and Theoretical distribution:-

Meaning and Definition of Probability- Types of Events – Theorems of Probability- Addition & Multiplication Theorem of Probability (simple Problems)
Meaning of Probability Distribution – Binomial –Poisson- Normal distributions (Theory & Problems)

Unit III: Theory of Estimation: Meaning of Theory of Estimation Characteristics of Good Estimator Point and Interval Estimation of Population Mean Proportion and Variance (Theory and Problems).

UNIT: IV: - Test of Significance:-

Meaning and Definition of Hypothesis – Procedure of testing of Hypothesis –t-Test –F-Test, Chi-square and Z test (Theory & Problems)

UNIT: V: - Statistical Quality Control:-

Meaning, objectives and Role of Statistical Quality Control – Procedure of Constructing Quality Control Charts – (Theory & Problems)

Reference:

- Kothari, Research Methodology,
- C.R. Reddy, Quantitative Methods for Management Decision, Himalaya Publishing House, Mumbai, 2009.
- Richard I. Levin and David S. Rubin, Statistics for Management, Prentice Hall of India, Private Limited, New Delhi.
- Hood R.P Statistics for Business and Economics, Sultan Chand & Sons, New Delhi.
- Gupta S.P., and Gupta M.P., Business Statistics, Prentice Hall, New Delhi

SEMESTER - I

PAPER-IV:- ORGANIZATIONAL BEHAVIOUR

Internal Marks: 25

No. of Hours per Week: 5

Exam Duration: 3Hrs

External Marks:75

Objective: the objective of this paper is to equip the student the fundamental knowledge of organizational behavior and techniques of understanding predicting and controlling human behaviour in organization effectively.

Unit I : Introduction to organizational behaviour Organizational Behaviour — definition- nature- scope-importance-fundamental concepts- historical evolution and development of OB-models of OB-OB as an interdisciplinary subject.

Unit II: Dynamics of individual behavior Personality-definition-determinants- types of personality-theories of personality- perception: definition- perceptual process- factors influencing Perception-perceptual blocks- honing perceptual skills- work motivation- concept and importance —Theories of motivation- Maslows need hierarchy theory- Herzberg's two factor theory —McClelland's Achievement theory —Vroom Expectancy theory- Reinforcement theory of motivation- motivation in practice —work stress- meaning- causes and consequences — strategies and techniques to manage stress.

Unit III: Dynamics of Group Behaviour: Work group meaning- characteristics- reason for forming into groups- stages of group development —Group dynamics- Group cohesiveness- determinants of group cohesiveness- Leadership: concept and meaning —theories of leadership- trait theory- Behaviour theories —Contingency theories- Fielder contingency theories- Reddin's 3-D model —Blake & Mouton's Managerial Grid model —Hersey & Blanchard's leadership life cycle theory- Conflict Management: Definition —causes and Consequences- conflict management styles.

Unit IV: Organisational Dynamics: Communication- meaning- factors influencing organizational communication- barriers to effective communication- Organisational change- behavioral reactions to change- planned change- approaches to manage organizational change- Organizational Effectiveness: indicators of effectiveness- approaches to achieve organizational effectiveness.

Unit V: Emerging aspects of Organizational Behaviour - **Organizational behaviour across cultures** - Conditions affecting multinational operations, Managing International Workforce, Productivity and cultural contingencies, Cross cultural communication.

Reference Books:

1. Stephen P. Robbins, Organizational Behavior, Prentice Hall of India Ltd.
2. Fred Luthans, Organisational Behaviour, Prentice Hall of India Ltd
3. John W. Newsroom and Keith Davis, Organizational Behaviour, Tata McGraw Hill
4. SubbaRao P, Management and Organisational Behavior, Himalaya Publications

SEMESTER –I

PAPER CODE 1505 Paper -V: ENTREPRENEURSHIP DEVELOPMENT

Internal Marks: 25

No of Hours per week: 5

Max Time: 3hrs

External Marks: 75

Objective: The objective of this paper is to coin the students about the conceptual framework of entrepreneurship development along with financial institutions aiding to MSMEs in India.

UNIT I – Introduction: meaning and Definition of Entrepreneur and Entrepreneurship - Characteristics of Entrepreneur - Functions - Attitude and Leadership of Entrepreneur - Entrepreneur Vs Manager - Role of Entrepreneurship in Economic Development - Need for Rural Entrepreneurship - Women Entrepreneurship

UNIT II - Entrepreneurship Development: Economic and Non-economic Factors Affecting Entrepreneurship Development - Government Actions, Entrepreneurial Motivation, Competencies and Mobility - Entrepreneurship Development Programmes (EDPs) - Growth of Entrepreneurship in India

UNIT III - Objectives, Characteristics and Importance of MSMEs in Indian Economic Development - Role of MSMEs during Planning Era - New Small Enterprise Policy 1991 - Policies and Programmes for Promoting MSMEs

UNIT IV- Institutional Finance: Need of Institutional Infrastructure for MSMEs - Role of Commercial Banks, IDBI, SFC, NABARD, SIDO, NSIC, NISIET, NIESBUD, NRDC, SIDBI, DIC, SIDCs for development of MSMEs - Drawbacks and Problems of MSMEs - Prospects and Opportunities of MSMEs.

UNIT V – Concept of project and classification of project identification project formulation - project report - project design - project appraisal - profitability appraisal - project planning - social cost benefit analysis - financial analysis and project financing.

Suggested Readings

- Nandan, H, Fundamentals of Entrepreneurship, Prentice Hall of India, New Delhi.
- Vasant Desai, Dynamics of Entrepreneurship Development and Management, Himalaya Publishing House, New Delhi
- Thomas, W. Zirmerer, Norman, M. Scarborough, Essentials of Entrepreneurship and Small Business Management, Pearson Education, New Delhi
- Madhurima La11, ShikshaSahai, Entrepreneurship, Excel Rooks, New Delhi

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SEMESTER - II

PAPER :VI - HUMAN RESOURCE MANAGEMENT

Internal Marks: 25

No of Hours per week: 5

Max Time: 3hrs

External Marks: 75

Unit I: Introduction: HRM Concept-Nature, Scope, Objectives and Importance of HRM- HRM as a Profession- Functions of HRM- Emerging trends in HRM in the 21st Century.

Unit II: Human Resource Planning: HRP Concept —Nature — Importance —Factors Affecting HRP — Requisites for Successful of HRP —Job Analysis Methods and Purposes- Job Description —Job Specification — Job Evaluation- Process and Methods of Job Evaluation.

Unit III: Recruitment, Selection, Training and Development: Recruitment- Source of Recruitment- Selection Process- Interview Test - Training Methods- Evaluating Training Effectiveness- Career Planning and Career Development.

Unit IV: Appraising and Managing Performances: Performance Appraisal System- Concept- Appraisal Methods — Challenges of Performance Appraisal- Possible Errors in the Appraisal Process- Planning for performance improvement —Recent trends in Appraisal system.

Unit V: Labour relations and employee security Industrial relation and collective bargaining: Trade unions - Collective bargaining - future of trade unionism. Discipline administration - grievances handling - managing dismissals and separation.

Reference:

- SubbaRao, P., Personnel and Human Resource Management, Himalaya Publishing House, Mumbai.
- David A. Decenzo & Stephen P. Robbins: Personnel/Human Resource Management, Prentice-Hall of India Ltd., Delhi.
- William B. Werther J.R. & Keith Davis: Human Resource and personal Management, Mc-Graw Hill.
- Pareek, V&T, V, Rao: Designing and Management Human Resource Systems, oxford and IBM, Delhi.
- P.C. Tripathi: personnel Management, S.Chand, New Delih.
- Drwar, , R.S.: personal Management and Industrial Reletions, Vikas.
- C.S.VenkataRathnam, B.K.Srivastava: personal management and Human Resources,, Mc-Graw Hill.

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SEMESTER - II

PAPER VII: MARKETING MANAGEMENT

Internal:25

External:75

No of hours per week: 5

Max time: 3 Hours

Objective: The objective of the course is to equip the student with various aspects relating Marketing Management.

Unit I: introduction:

Meaning –Nature - Scope and Importance of Marketing - Marketing Concept and its Evolution- Marketing Environment-Macro and Micro Components and Their Impact on Marketing Decisions-Marketing Segmentation and Positioning.

Unit II: Product Decision&Pricing Decisions:

Concept of a Product-Classification of Products-Major Product Decisions-Product line and Product Mix-Branding-Packaging and Labeling- Product Life Cycle Strategic Implications-New Product Development and Consumer Adoption Process

Unit III: Pricing Decisions:

Factors Affecting Price Determination-Pricing Policies and Strategies-Discounts and Rebates.

Unit IV: Distribution Channels & Promotion Mix

Nature - Functions and Types of Distribution Channels-Distribution Channel Intermediaries-Channel Management Decisions-Retailing and Wholesaling.

Elements of Promotion Mix —Personal Selling Sales Promotion Advertising and Publicity.

Unit V: Consumer Behaviour:

Consumer Behaviour- nature-Scope- Importance- Factors influencing Consumer Behaviour – Economic- psychological- Cultural- Social and Personal- Models of Consumer Behaviour –steps in consumer decision process – post purchase behaviour

References:

1. Kotler, Philip and Gary Armstrong: Principles of Marketing, Prentice Hall New Delhi
2. Kotler, Philip: Management-Analysis, Planning, Implementation and Control Prentice Hall, New Delhi
3. Majumbar, Ramanuj: Product Management in India, Prentice Hall, New Delhi
4. McCarthy, E. Jerome and William D. Perreault Jr. Basic Marketing-Managerial Approach, Richard D. Irwin, Homewood, Illinois
5. Ramaswamy, V.S and Narayana S., Marketing Management, Mcmillan India, New Delhi
6. Srinivasan, R; Case Studies in Marketing: The India Context, Prentice Hall, New Delhi
7. Blackwell: Consumer Behaviour, 10e.

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SEMESTER - II

PAPER- VIII: FINANCIAL MANAGEMENT

No of hours per week: 5

Max time: 3 hours

Internal Marks :25

External Marks :75

Objective: The objective of the course is to equip the student with financial Management concepts and skill.

Unit I: Introduction to Financial Management:

An Overview of Finance Function -Scope of finance Function- Financial Management — Meaning, Goals and Objectives of Financial Management-Time Value of Money.

Unit II Investment Decisions:

(a) Nature of Investment Decisions-Capital Budgeting- Meaning and Importance-Types of Capital Budgeting Decisions Methods of Appraisal-Payback Period- Average Rate of Return- Net Presents Value Method- Profitability Index- Internal Rate of Return- Capital Budgeting under Risk and Uncertainty.

(b) Cost of Capital: Concept, Importance- Measurement of Specific Cost of Various Sources of Capital- Measurement of Weighted Average Cost of Capital.

Unit - III (a) Financial Decisions:

Concept of Leverage- (A) Operating and Financial Leverage Combined Leverage – Measures of Various Leverages (B) Meaning - Meaning, Determinants of Capital structure-Optimum Capital Structure - Capital Structure Theories-Net Income Approach-Net Operating Income Approach-M.M. Hypothesis- Traditional View.

(C) Financial Restructuring- Meaning, Scope and Modes of Restructuring-, Merger, Takeover and Amalgamations.

Unit-IV:DIVIDEND AND RETAINED EARNINGS:

Dividend Policy Decisions; Parameters, Dividend Models; Policies Regarding Retained Earnings.

Unit V: Working Capital Management:

An overview- Concept of Working Capital- Determinants of Working Capital- Optimum Level of Current Assets- Estimating Working Capital Requirements.

References:

1. Pandey, I.M. Financial Management, Vikas Publishing House (p) Ltd.
2. Khan, M.Y. and Jain, P.K. Financial Management, Tata Mc- Graw Hill
3. Chandra prasanna: Financial Management, Tata Mc- Graw Hill
4. Hampton. Johni. Financial Decisions-Making: prentice Hill India (p)
5. Maheswari, S.N.: Principles of Financial Management, Sultan Chand.
6. Van Horn, James C. Financial Management, Prentice Hall India (p) Ltd

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**SYLLABUS FOR FIRST YEAR M.COM PROFESSIONAL FOR THE ACADEMIC
YEAR 2015-2016**

SEMESTER - II

PAPER- IX: BUSINESS RESEARCH METHODOLOGY

No of hours per week: 5 Max time: 3 hours

Internal Marks :25

External Marks :75

UNIT-I :- Nature and scope of Business Research-Objective, Types and Characteristics of business research –Importance of business research –Application of business research-Steps involved in research process

UNIT-2 :- Formulation of business research problem: Selecting and defining the problem research design : meaning- purpose- research design decisions- research design for exploratory , descriptive and experimental studies.

UNIT-3 :- Collection of primary data- Interview, Questionnaires and schedules- Designing Questionnaires- collection of secondary data- sources of secondary data for business research . Sampling design, types of samples- criteria for selection of sample- Characteristics of good sample design.

UNIT-4:- Data processing and analysis: validity and reliability- data processing – editing coding and tabulation . Analysis of quantitative data – Application of statistical techniques –Averages, correlation, regression, time series- Analysis of qualitative data: Scaling techniques – important scaling techniques.

UNIT-5:-Interpretation and report writing: Inferences and generalizations- Significance of business research reports formant of research report- steps in preparing business research report – precautions in writing business research report- Characteristics of good research report.

References:

1. C.R.Kothari : Research Methodology Methods and techniques wishwaprakashan, New delhi
2. WilknsnandBhandarkar : Methodology and techniques of social science research, Himalaya publishing house.
3. Ferber R and VerdoomF.H : Research methods in economics and business.
4. Nammers B.E &Mysers J.H Business statistics, F.J Prentice Hall.
5. Spegal M.R. An Introduction to management for business analysis, Mc. Graw Hill.
6. Michael V.P Research methodology in management in Himalaya publishing.

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**SYLLABUS FOR FIRST YEAR M.COM PROFESSIONAL FOR THE ACADEMIC
YEAR 2015-2016**

SEMESTER - II

PAPER -X: MANAGEMENT ACCOUNTING

Internal Marks:25 No of hours per week: 5 Max time: 3 hours

External Marks:75

Objective: The objective of the course is to equip the student with the account maximum concepts, tools and techniques necessary for managerial decisions.

Unit I - Introduction: Management Accounting as Area of Accounting – Objectives and Scope of Financial Accounting - Cost Accounting, and Management Accounting
Management Accounting Managerial Decisions - Management Accountant Position, Role and Responsibilities

Unit II - Budgeting: Meaning and Definition of Budget - Essentials of Budgeting -Types of Budgets - Fixed and Flexible Budget - Budgetary Control - Zero-base Budgeting – Performance Budgeting -

Standard Costing as cost Technique - Setting of Standards and Their Revision - Meaning and Importance of Variances Analysis - Labour Overhead Variances - Disposal of Variances - Relevance of Variance Analysis Budgeting and Standard Costing

UNIT-III Marginal Costing and Break-Even Analysis: Meaning and Definition of Marginal Cost – Marginal

Cost Versus Direct Costing –C-V-P Analysis- Assumptions in Break-Even Analysis - Practical Applications of

Break-Even Analysis - Make or Buy Decisions of Product

Unit IV -Funds flow & Cash flow analysis:-

Funds- Meaning-Importance-limitations-preparation of funds flows statement & cash flow statements

Unit V -Contemporary Issues in Management Accounting: Value Chain Analysis –

Activity-based Costing - Target and Life Cycle Costing- Objectives of Reporting – Types of

Reports – Need of Reporting at Different Managerial Levels and Different Management

.

Recommended Books:

1. Antony, Robert, Management accounting, Taraporewala Mumbai.
2. Docoster, Don T. and Elden L. Schater, Management Accounting. Decision Emphasis, John Wiley and Sons, INC, New York.
3. Horngren, C.T., Gary L. Sundem and William O Straton Introduction Management Accounting, Prentice Hall, Delhi.
4. Pandey I.M., Management Accounting, Vani publication, Delhi.
5. Welsh Glern, A.RonaldW.Hilton and Pual N. Garden., Budgeting: Pro-Planning and Control, Prentice Hall, Delhi

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FUNDAMENTALS OF ACCOUNTANCY

SEMESTER – II OPEN ELECTIVE FOR ALL GROUPS

EXTERNAL MARKS : 75
INTERNAL MARKS:25

Objectives:

- 1.To make the students acquire the conceptual knowledge of accounting
- 2.To equip the students with the knowledge of accounting process and preparation of final accounts

UNIT1: Introduction to Accounting:

Need for Accounting – Definition, features, objectives, functions, systems and bases and scope of accounting - Book keeping and Accounting - Branches of Accounting - Advantages and limitations-basic terminology used- – Accounting concepts and conventions. Accounting Process-Accounting cycle-Accounting equation-Classification of accounts-rules of double entry book keeping – Identification of financial transactions- Journalizing –Posting to Ledgers, Balancing of Ledger Accounts –

UNIT 2: Subsidiary Books & Trial Balance

Sub Division of Journal-Preparation of Subsidiary Books including different types of cashbooks- Simple cashbook, cashbook with cash and discount columns, cashbook with cash, discount and bank columns, cashbook with cash and bank columns and petty cash book Trial Balance: Meaning, Objectives, Methods of preparation

UNIT:3 :Final Accounts

Final Accounts: Meaning, features, uses and preparation of Manufacturing, Trading Account, Profit & Loss Account and Balance Sheet-Adjusting and Closing entries. Preparation of trial balance, trading, profit and loss account, processing of year ending and closing

UNIT :4: Errors and Rectification

Errors and their Rectification - Types of Errors - Rectification before and after preparations of final Accounts - Suspense Account- Effect of Errors on Profit.

UNIT - 5:Bank Reconciliation Statement

Bank Reconciliation Statement- Need - Reasons for difference between cash book and pass book balances – Problems on favorable and over draft balances - Ascertainment of correct cash book balance.

Suggested Books:

- 1.Accountancy - IS.P. Jain & K.L Narang , Kalyani Publishers
2. Accountancy – ITulasian, ataMcgraw Hill Co

