A.C. meeting were approved .

3) ***Resolution adopted for the introduction of new courses from the Academic year 2015-16,2016-17 and 2017-18.***

Discussion: *i)* Department of higher Education sanctioned B.Sc(MPC) TM and M.Sc(Botany) for the academic year 2015-16. Hence these two courses have been started from the academic year 2015-16.

B. Sc Course with the combination of Bio-chemistry, Chemistry and Computer Science was sanctioned by the Department of Higher Education. But as there is no demand for this group, it has been changed to B. Sc with the combination of Chemistry, Physics (Non-Maths) and Computer Science and this group has been started with an intake of 30 students from the academic year 2015-16.

ii) Department of Higher Education sanctioned M.A(Telugu) and MA(History) for the academic year 2017-18. As the college was not included in the prospectus of Rayalaseema University for these courses for this academic year, the University did not allot the students to the above PG Courses. They may be started with an intake of 30 students from the academic year 2018-19.

Resolution: Resolved to approve the new courses started.

4) ***Approval of CBCS pattern for UG & PG Courses***

Discussion: CBCS pattern is adopted from 2015-16 for UG & PG students. Under this pattern, both UG & PG courses are run under semester system. Credit pattern per each semester is placed before Governing Body. The august body noted the credit pattern.

Resolution: Approved the CBCS system for both UG & PG Courses.

5) Ratification for the appointment of controller of Examination and Assistant Controller of Examinations.

Discuusion: As per the resolutions made by the staff council, in the I year of autonomy, Dr. S.Sunitha, Lecturer in Botany has been appointed as controller of Examinations. After the starting of II year of autonomy senior faculty Dr.C.Obulpathi, lecturer in Zoology was appointed as Controller of Examinations and Dr.S.Sunitha, Lecturer in Botany is appointed as Assistant Controller of Examinations.

Resolution: Appointments of Controller of Examinations and Assistant Controller of Examinations were approved.

6) Approval of establishment of ATM in the college premises.

KVR GOVT. COLLEGE FOR WOMEN (A), KURNOOL

GOVERNING BODY MEETING – I

Date : 08-08-2017
Time : 2.00 PM

Venue : O/o the Commissioner of Collegiate Education,
Vijayawada , Andhra Pradesh.

COMPOSITION OF THE GOVERNING BODY

S.No	Category	Name and Designation	Description	Signature
1	Educationist	**Sri M.S. Panda Das, IAS.,** Special Commissioner of Collegiate Education, Andhra Pradesh, VIJAYAWADA.	Chairperson	
2	Industrialist	Sri K.C. Kalkura, Proprietor Group of Kalkura Hotels, Kurnool.	Member	
3	Professional	Prof. A.R.Reddy, Vice Chancellor, Yogi Vemana University, Kadapa.	Member	
4	Teachers of the college	Smt. M.Venkatasubbamma, Lecturer in Hindi.	Member	
		Dr.K.Veerachari, Reader in Economics KVR Govt. College for Women (A), Kurnool.	Member	
5	UGC Nominee	Neethu Tulasidharan, UGC, New Delhi.	Member	
6	Educationist	Sri S.Srinivasa Reddy, Philanthropist.	Member	
7	State Govt. Nominee	Smt. P.Padmavathi, Regional Joint Director of Collegiate Education, Kadapa Region, Kadapa.	Member	
8	University Nominee	Prof. DVR Sai Gopal, SV University, Tiripati.	Member	
9	Principal of the college	Dr.S.Abdul Khader, Principal (FAC), KVR GCW (A), Kurnool	Ex-Officio Mem. Sec.	
10	Special Invitees	1. Dr. N.Geethanjali, Joint Director, O/o the Spl. CCE, AP, Vijawada.		
		2. Dr. Illa Ravi, Academic Guidance Officer, O/o the Spl. CCE, AP, Vijawada.		
		3. Mr.Anil Kumar, Academic Officer, O/o the Spl. CCE, AP, Vijawada.		
		4. Dr.C.Obulapathi, Controller of Exams, KVR GCW (A), Kurnool.		
		5. Dr.C.P.Lakshmi Prasuna, Academic Co-ordinator, KVR GCW (A), Kurnool.		

CREDITS ALLOTTED FOR PAPERS:

As a part of curriculum upgradation, Semester and CBCS systems were introduced in KVR Govt. College from 2015-16.

ALLOCATION OF CREDITS AT UG PROGRAMME LEVEL

UG-CREDITS ALLOTTED FOR PAPERS:

S.NO	SUBJECTS/PAPERS	NO. OF CREDITS		
		B.SC	BA	B.COM
1	First Language-1(Semester-I) (Telugu /Hindi /Urdu)	3	3	3
2	First Language-2(Semester-II) (Telugu /Hindi /Urdu)	3	3	3
3	First Language-3(Semester-III) (Telugu /Hindi /Urdu)	3	3	3
4	Second Language-1(Semester-I) (English)	3	3	3
5	Second Language-2(Semester-II) (English)	3	3	3
6	Second Language-3(Semester-III) (English)	3	3	3
7	10 Foundation Courses (ISem -2; IISem-2; IIISem-2; IV Sem-4)	20 (each 2 credits)	20 (each 2 credits	20 (each 2 credits
8	DSC- 1 PAPER -1(Semester-I)	3	4	4
9	DSC -1 PAPER-1 Lab(Semester-I)	2	-	-
10	DSC-2 PAPER-1(Semester-I)	3	4	4
11	DSC-2 PAPER-1 Lab(Semester-I)	2	-	-
12	DSC-3 PAPER-1(Semester-I)	3	4	4
13	DSC-3 PAPER-1 Lab(Semester-I)	2	-	-
14	DSC-1 PAPER-2(Semester-II)	3	4	4
15	DSC-1 PAPER-2 Lab(Semester-II)	2	-	-
16	DSC-2 PAPER-2(Semester-II)	3	4	4
17	DSC-2 PAPER-2 Lab(Semester-II)	2	-	-
18	DSC -3 PAPER-2(Semester-II)	3	4	4
19	DSC- 3 PAPER-2 Lab(Semester-II)	2	-	-
20	DSC-1 PAPER-3(Semester-III)	3	4	4
21	DSC-1 PAPER-3 Lab(Semester-III)	2	-	-
22	DSC-2 PAPER-3(Semester-III)	3	4	4
23	DSC-2 PAPER-3 Lab(Semester-III)	2	-	-
24	DSC -3 PAPER-3(Semester-III)	3	4	4
25	DSC- 3 PAPER-3 Lab(Semester-III)	2	-	-
26	DSC-1 PAPER-4(Semester-IV)	3	4	4
27	DSC-1 PAPER-4 Lab(Semester-IV)	2	-	-

28	DSC-2 PAPER-4(Semester-IV)	3	4	4
29	DSC-2 PAPER-4 Lab(Semester-IV)	2	-	-
30	DSC -3 PAPER-4(Semester-IV)	3	4	4
31	DSC- 3 PAPER-4Lab(Semester-IV)	2	-	-
32	DSC-1 PAPER-5(Semester-V)	3	4	4
33	DSC-1 PAPER-5 Lab(Semester-V)	2	-	-
34	DSC-2 PAPER-5(Semester-V)	3	4	4
35	DSC-2 PAPER-5 Lab(Semester-V)	2	-	-
36	DSC -3 PAPER-5(Semester-V)	3	4	4
37	DSC- 3 PAPER-5Lab(Semester-V)	2	-	-
38	DSC-1 PAPER-6(Semester-V)	3	4	4
39	DSC-1 PAPER-6 Lab(Semester-V)	2	-	-
40	DSC-2 PAPER-6(Semester-V)	3	4	4
41	DSC-2 PAPER-6 Lab(Semester-V)	2	-	-
42	DSC -3 PAPER-6(Semester-V)	3	4	4
43	DSC- 3 PAPER-6 Lab(Semester-V)	2	-	-
44	DSC-1 PAPER-7; Elective- 1 (Semester- VI)	3	4	4
45	DSC-1 PAPER-7 LAB; Elective- 1 Lab (Semester- VI)	2	-	-
46	DSC-2 PAPER-7; Elective- 2 (Semester- VI)	3	4	4
47	DSC-2 PAPER-7; Elective- 2 Lab (Semester- VI)	2	-	-
48	DSC-3 PAPER-7; Elective- 3 (Semester- VI)	3	4	4
48	DSC-3 PAPER-7; Elective- 3 Lab (Semester- VI)	2	-	-
49	DSC-1 PAPER-8; Cluster Elective- 1 (Semester- VI)	3	4	4
50	DSC-1 PAPER-8; Cluster Elective- 1 Lab (Semester- VI)	2	-	-
51	DSC-2 PAPER-8; Cluster Elective- 2 (Semester- VI)	3	4	4
52	DSC-2 PAPER-8; Cluster Elective- 2 Lab (Semester- VI)	2	-	-
53	DSC-3 PAPER-8; Cluster Elective- 3 (Semester- VI)	3	4	4
54	DSC-3 PAPER-8; Cluster Elective- 3 Lab (Semester- VI)	2	-	-
TOTAL CREDITS ALLOTTED FOR EACH GROUP		**158 Credits**	**134 Credits**	**134 Credits**

UG- CREDIT PATTERN ABSTRACT:

S. NO	SUBJECTS/PAPERS	No. of credits	No. of credits for each group		
			B.SC	BA	B.COM
1	First Language-1,2,3 PAPERS (for Semester I,II &III)	3Papers x3 credits= 9 credits	9	9	9
2	Second Language(English)- 1,2,3 papers(for Semester I,II &III)	3Papers x3 credits= 9 credits	9	9	9
3	Foundation Courses(1-10) (For Semester I,II,III,IV)	10Papers x2 credits= 20 credits	20	20	20
4	DSC Papers for I to V Semesters 18 Papers	18 Papers x 3 Credits = 54 Credits	54	-	-
5	DSC Papers(Lab) for I to V Semesters = 18 Papers	18 Papers(Lab) x 2 Credits = 36 Credits	36	-	-
6	DSC Elective Papers for VI Semesters = 6 Papers	6 Papers x 3 Credits =18 Credits	18	-	-
7	DSC Elective Papers Lab for VI Semesters = 6 Papers	6 Papers x 2 Credits =12 Credits	12	-	-
8	DSC Papers for I to V Semesters (3 Papers X 5 Semesters= 18 Papers)	18 Papers x 4 Credits = 60 Credits	-	72	72
	DSC Elective Papers for VI Semesters = 6 Papers	6 Papers x 4 Credits =24 Credits	-	24	24
TOTAL CREDITS ALLOTTED FOR EACH GROUP			**158 Credits**	**134 Credits**	**134 Credits**

ALLOCATION OF CREDITS AT PG PROGRAMME LEVEL

PG- CREDITS ALLOTTED FOR PAPERS:

S. NO	SUBJECTS/PAPERS	NO. OF CREDITS						
		M.Sc Botany	M.Sc Chemistry	MA English	M.Com Commerce	MA History	MA Economics	MA Telugu
1	Core-1 Paper(Semester-I)	3	3	4	4	4	4	4
2	Core-1 Lab Paper(Semester-I)	2	2	-	-	-	-	-
3	Core-1 Paper(Semester-II)	3	3	4	4	4	4	4
4	Core-1 Lab Paper(Semester-II)	2	2	-	-	-	-	-
5	Core-1 Paper(Semester-III)	3	3	4	4	4	4	4
6	Core-1 Lab Paper(Semester-III)	2	2	-	-	-	-	-
7	Core-1 Paper(Semester-IV)	3	3	4	4	4	4	4
8	Core-1 Lab Paper(Semester-IV)	2	2	-	-	-	-	-
9	Core-2 Paper(Semester-I)	3	3	4	4	4	4	4
10	Core-2 Lab Paper(Semester-I)	2	2	-	-	-	-	-
11	Core-2 Paper(Semester-II)	3	3	4	4	4	4	4
12	Core-2 Lab Paper(Semester-II)	2	2	-	-	-	-	-
13	Core-2 Paper(Semester-III)	3	3	4	4	4	4	4
14	Core-2 Lab Paper(Semester-III)	2	2	-	-	-	-	-
15	Core-2 Paper(Semester-IV)	3	4(with out lab)	4	4	4	4	4
16	Core-2 Lab Paper(Semester-IV)	2	-	-	-	-	-	-
17	Core-3 Paper(Semester-I)	3	3	4	4	4	4	4
18	Core-3 Lab Paper(Semester-I)	2	2	-	-	-	-	-
19	Core-3 Paper(Semester-II)	3	3	4	4	4	4	4
20	Core-3 Lab Paper(Semester-II)	2	2	-	-	-	-	-
21	Core-3 Paper(Semester-III)	3	4(with out lab)	4	4	4	4	4
22	Core-3 Lab Paper(Semester-III)	2	-	-	-	-	-	-
23	Core-3 Paper(Semester-IV)	4 (Elective without lab)	-	4	4	4	-	4 (Elective)
24	Core-3 Lab Paper(Semester-IV)	-	-	-	-	-	-	-
25	Core-4 Paper(Semester-I)	3	4(with out lab)	4	4	4	4	4
26	Core-4 Lab Paper(Semester-I)	2	-	-	-	-	-	-
27	Core-4 Paper(Semester-II)	4(Open Elective without lab)	4 (Open Elective without	4	4	4	4	4

			lab)-					
28	Core-4 Lab Paper(Semester-II)	-	-	-	-	-	-	-
29	Core-4 Paper(Semester-III)	-	4(with out lab)	4	4	4 (Open Elective)	4 (Elective)	4
30	Core-4 Lab Paper(Semester-III)	-	-	-	-	-	-	-
31	Core-4 Paper(Semester-IV)	-	-	-	4	4	-	-
32	Core-4 Lab Paper(Semester-IV)	-	-	-	-	-	-	-
33	Core-5 Paper(Semester-I)	-	-	4	4	4	4	4
34	Core-5 Paper(Semester-II)	-	-	4	4	4(Open Elective)	4	4
35	Core-5 Paper(Semester-III)	-	-	4	4	4 (Optional)	4	4(Elective)
36	Core-5 Paper(Semester-IV)	-	-	-	4	4 (Optional)	-	-
37	Core-6 Paper(Semester-I)	-	-	-	4	-		4
38	Core-6 Paper(Semester-II)	-	-	4	4	-		4
39	Core-6 Paper(Semester-III)	-	-	-	4	-	4 (Elective)	4
40	Core-6 Paper(Semester-IV)	-	-	-	4	-	-	-
41	Core-7 Paper(Semester-II)	-	-	-	4	-	-	-
42	Elective Paper (Semester-IV)	-	-	-		-	-	-
43	Project work + Viva	12 (for 300 marks)	8 (for 200 marks)	8 (for 200 marks)	8 (for 200 marks)	-	-	12(for 300 marks)
TOTAL CREDITS ALLOTTED FOR EACH GROUP		**80 Credits**	**73 Credits**	**84 Credits**	**108 Credits**	**80 credits**	**72 Credits**	**96 Credits**

PG - CREDIT PATTERN ABSTRACT:

S. NO	SUBJECTS/ PAPERS	No.of Credits	NO. OF CREDITS						
			M.Sc Botany	M.Sc Chemistry	MA English	M.Com Commerce	MA History	MA Economics	MA Telugu
1	Core Papers (with lab)	12 Papers x 3 Credits= 36 Credits	36 Credits						
2	Core Papers (with lab)	9 Papers x 3 Credits= 27 Credits		27 credits					
3	Core Papers (with out lab)	19 Papers x 4 Credits= 76 Credits			76 Credits				
4	Core Papers (with out lab)	25 Papers x 4 Credits= 100 Credits				100Credits			
5	Core Papers (with out lab)	20 Papers x 4 Credits= 80 Credits					80Credits		
6	Core Papers (with out lab)	18 Papers x 4 Credits= 72 Credits						72Credits	
7	Core Papers (with out lab)	21 Papers x 4 Credits= 84 Credits							84Credits
8	Elective Papers (without lab)	2 Papersx4 Credits= 8Credits	8Credits						
9	Elective Papers (without lab)	5 Papersx4 Credits= 20 Credits		20 Credits					
10	Practicals	12 papers x 2Credits= 24 Credits	24 credits						
11	Practicals	9 Papers x 2Credits= 18 Credits		18 Credits					
12	Project work	-	12 credits (300 marks)	8 credits (200 Marks)	8Credits (200 Marks)	8Credits (200 Marks)			12Credits (300 Marks)
TOTAL CREDITS ALLOTTED FOR EACH GROUP			**80Credits**	**73 Credits**	**84 Credits**	**108 Credits**	**80 Credits**	**72 Credits**	**96 Credits**

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

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

Semester –VI

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

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

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

Semester –VI

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

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

CBCS: Syllabus - Semester Wise From 2017-18 as per APSCHE

III Year B.A. Political Science **Semester – VI**

Paper VIII-C-1 (Cluster Elective): INTERNATIONAL RELATIONS

(అంతర్జాతీయ సంబంధములు)

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 APSCHE
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 సంబందాలు- పూర్వ ప్రచ్ఛన్న యుద్ద దశ – ప్రచ్ఛన్న యుద్ద తదనంతర దశ
2. India – China Relations: Pre- Cold War Era, Post- Cold War Era (భారత- చైనా సంబందాలు పూర్వ ప్రచ్ఛన్న యుద్ద దశ – ప్రచ్ఛన్న యుద్ద తదనంతర దశ

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

1. India's relations with SAARC countries (సార్క్ దేశాలతో 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

K.V.R. GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
CBCS: SYLLABUS - SEMESTER WISE (2017-18) As per APSCHE
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 వ్యవస్తలు)

1. International Monetary Fund , World Bank-Nature, Role and Functions (ఐ. యమ. 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 an owens, P(E Globalization of world politics, New York, P

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Syllabus for B.A. Urdu CBCS 2017-18

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**

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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

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ANNEXURE – VIII

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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 III rd Year – VI th 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 platfrom – 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

5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammarai selvi, TMH

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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 III rd Year – VI th 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.

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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 III rd Year – VI th 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

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

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 cultivatedand 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

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

III B.Sc., SEMESTER – VI

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 sepentina, 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.

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III B.Sc., SEMESTER – VI

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:chemisctry 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,Erythromycine 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 – 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 serpentia, Trichopus zeylanicusm Artemisia Annua, Withania plants which are used as Ethanobotanical specimens

2.Azadirachta indica, Ocimum sanctum, Vitex negundo, Phyllanthus amarus Cassia auricunata, 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 un organized drugs – Asaphoetida, Honey, Castor oil ,

Acacia

2. Identification of bark drugs – Cinchona, Cinnamom

3. Identification of fruit drugs – Cardamom, Coriander

4.Identification of Root and Rhizome drugs – Ginger , Garlic, Turmeric

5.Identification of whole plant – Aloes, Vinca, Punarnava

6.Herbarium of 20 medicinal plants

7.Collection of 20 locally available crude drugs from local venders

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NAAC RE- ACCREDATED 'A' GRADE
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

2.2Culture systems

2.2.1 cages, pens , Raceways, and water recirculating systems

2.3Culture practices

2.3.1Traditional, extensive, intensive, cultures of fish.

Unit – III

3.1 Design and construction of aquafarms

3.1.1Criteria 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

4.1Management 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.

KVR GOVT COLLEGE(W), KURNOOL
(Autonomous)
NAAC RE- ACCREDATED 'A' GRADE
Cluster Elective Paper: VIII-B-2
AQUACULTURE MANAGEMENT

Periods : 60 **Max.Marks : 100**

Unit – I

1.1Breeding 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

5.1.2Fish 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.5Halver 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 CircularNo. 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. ReddyPVGK, AyyappanS, ThampyDM & 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 Aquculture Development. Daya Publ. House

22. Stickney RR. 1979. Principles of Warm waterAquaculture. John-Willey & 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- ACCREDATED '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

3.1.1Fish 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- ACCREDATED 'A' GRADE
ZOOLOGY PRACTICLSYLLABUSCLUSTER 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 carbondioxide, 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

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KVR GOVT COLLEGE(W), KURNOOL
(Autonomous)
NAAC RE- ACCREDATED 'A' GRADE
ZOOLOGY PRACTICLSYLLABUSCLUSTER 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

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, AX_2 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 Morril.
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

ORGNAIC PHOTOCHEMISTRY

Norrisch cleavages, type I : Mechanism, acyclic cyclicdiones, influence of sensitizer, photo Fries rearrangement. Norrisch 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, benzoylation, 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. Witting reaction.

UNIT –V : NEW SYNTHETIC REACTIONS

Baylis–Hillman reaction, RCM olefin metathesis, Grubb catalyst, Mitsunobu reaction, McMurrey reaction , Heck reaction, Suziki 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.

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

Cluster Elective –III

ORGANIC

PAPER – VIII-C-3 : PHARMACEUTICAL AND MEDICINAL CHEMISTRY

45 hrs (3 h / w)

UNIT-I **8h**

Pharmaceutical chemistry Terminology: Pharmacy, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics (ADME, Receptors - brief treartment) Metabolites and Anti metabolites.

UNIT-II

Drugs: **8h**

Nomenclature: Chemical name, Generic name and trade names with examples Classification: Classification based on structures and therapeutic activity with one example each, Administration of drugs

UNIT-III: Structure, therapeutic use, activity, dosage and adverse effects of the following drugs: **12h**

I. Antibiotics: Penicillin, Chloramphenicol, Streptomycin, Tetracycline
II. Cardiovascular Drugs: Quidine, Methyldopa, Oxyprenolol, Atenolol
III. Anti-microbials: Sulfamethoxazole

UNIT-IV: Structure, therapeutic use, activity, dosage and adverse effects of Commonly Used drugs: **8h**

1. Antipyretics – Paracetamol, 2. Analgesics – Aspirin, 3. Anti-inflamatory drugs – Ibuprofen, 4. Diuretics – Frusemide (Lasix), 5. Anti diabetic drugs - Tolbutamide

UNIT-V

HIV-AIDS: **9h**

Immunity - CD-4cells, CD-8cells, Retro virus, Replication in human body, Investigation available, prevention of AIDS, Drugs available - examples with structures: PIS: Indivanir (crixivan), Nelfinavir(Viracept).

List of Reference Books:

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, ^{1}H 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

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
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, Monstessori, 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 apreschool

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. JagannathMohanthy and BhagyadharMohanthy, 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,

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL

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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

Socialization-Definition, factors of socialization, types, agents ,agencies and stages of socialization

social process-meaning, classification of social process

Unit-II

- Social groups – Definition, classification and characteristics of social groups – primary & secondary groups,formal and non-formal groups, and in & out groups

Communities in India

- Village Community – Definition, Features ,Characteristics of Indian villages, changes in Indian rural life

Unit-III

- Urban community –Definition, Features of urban community, factors contributing to growth of cities and major problems in cities

Unit-p-V Problems of women in Modern India - Increasing violence against women, Gender discrimination, Harassment of women at work place and exploitation of womene women in media, problems of female education, problems related women

employment and unemployment

Unit-IV

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

Unit-V

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

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
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 developmentalprogramme

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 socialMobilization

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. BasamusaHemaSubramanyam "Assistance for women's development from national agencies – Empolymentprogrammes"
3. O.P. Dahamma "Extension and Rural welfare", 1981. Ram Prasad and Sons Agra Bhopal.

III B.Sc., - BIOTECHNOLOGY SYLLABUS

SEMESTER–VIClusterElectives

Cluster Elective –A

PaperVIII–A-1 PlantBiotechnology

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-chemicalconditionsforpropagationofplantcellsandtissues;Cellular totipotency.

UNIT II:

Invitro Productions: Organ culture – Ovary , ovule , anther, and endosperm culture and their applications; Somatic embryogenesis ; Artificial seeds; Cybridization ; Invitroproductionofsecondarymetabolites–techniquesandsignificance.

UNIT III:

CultureTechniques: 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.

UNITIV:

Plant Biotechnology in Agriculture: Role of plant tissue culture in Indian Agriculture – Herbicide resistant, Pest resistant,Stressresistant,Pathogenfreeplantsetc.Transgenic cropswithimprovedqualitytraits-Flavrsavrtomatoes,Goldenrice,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 Pleuripotent 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

BTP: 502 -¬– A-¬-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 Immunoglobin.
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.

KVR GOVT. COLLEGE FOR WOMEN (AUTONOMOUS), KURNOOL
Re-Accredited by NAAC with Grade "A"
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, Periniciousanaemia, Sideroblasticanaemia and Sickel 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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Re-Accredited by NAAC with Grade "A"
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 t o 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, Spirocahetes 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.Nightblindedness. 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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Re-Accredited by NAAC with Grade "A"
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

ANNEXURE - VI

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-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 Indentify – 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

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-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, Trapozoidal 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-siedal 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.
1. Finite Differences and Numerical Analysis by H.C Saxena published by S. Chand and Company, Pvt. Ltd., New Delhi.

2. Numerical methods for scientific and engineering computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.

Suggested Activities:

Seminar/ Quiz/ Assignments

ANNEXURE - VIII

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-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: Variatonal 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)

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 - 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 pthlines – 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.

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 pyrheliometer.

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 andschottky 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: Czokralski (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 Mc-GrawHill 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 pyrheliometer.
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.

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 withballoons.

UNIT-II

3. Wind Energy Conversion System: Aerodynamic design principles; Aerodynamic theories; Axial momentum, blade element and combine theory; Rotor characteristics; Maximum power coefficient; Prandlt's tip losscorrection.

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 energyutilization; 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 andturbine; 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-Fundaments, 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.

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.

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 inelectrodes.

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. Squrensen, 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 recorded2hrs/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.

CHOICE BASED CREDIT SYSTEM (w.e.f. 2017-18)
B.Sc. Three-Year Degree Course (Semester Wise)
Syllabus for III rd Year – VI th 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.

Syllabus for III rd Year – VI th 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 platfrom – 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 Madisetti, University Press

Syllabus for III rd Year – VI th 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

PAPER 204: OPEN ELECTIVE –I: PLANTS AND HUMAN WELFARE

UNIT I : PLANTS AND ENVIRONMENTAL VALUES

Plants-Ecosysytem 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, Pharmocognosy-Principles, Identification of different constituents. Classification of Drugs . Analytical methods- drug adulteration and evaluation. Phytopharmocology 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.

Resolutions for Open Electives 19.9.15

The members of the PG self-funding met in the Principal chambers under the chairmanship of Principal and PG Convener and resolved the following resolutions:

AGENDA:

1. To frame Semester based Credit Systems. (CBCS Pattern)
2. Syllabus modified after BOS meeting
3. Question Paper Pattern for Internal exam. ie English, Botany, Chemistry, Commerce and Computer Science.
4. I Internal Exam sheduled to be conducted from 30th Sept.
5. Electives to be introduced in the departments
6. Panel of Examiners in each departments.
7. Spoken English classes for all PG students from October 5th onwards & Competitive exam Guidance.
8. ID Cards are to be maintained by PG students.

CBCS Pattern:

It is resolved to frame CBCS Pattern

Theory : 4 Credits Practicals : 2 Credits

Modified Syllabus:- All the PG Departments have to submit the modified syllabus, modified in BOS meeting.

Question Paper Pattern for Internal Exam:

English — Theory = 60 Marks

OAE = 40 Marks

(Objective = 20M, On-line Assignment = 05M

Seminar = 10M)

Attendance = 05M

Dept of Botany & Chemistry

Multiple choice (objective) = 20 M
Seminar / Assignment = 05 M
} 25 M

Theory = 75 Marks.

Dept of Commerce:

Internals = 40 Marks

(Internal Assessment = 25 M + Seminar 05 Marks + Assignment = 5 M
Attendance = 5 M)

Theory = 60 Marks.

Internal Exams: Sheduled to be conducted from 30th Sept onwards.

Open Electives: to be introduced during II semester

Botany : Plants & Human welfare = 100 Marks.
Chemistry : Environmental Chemistry = 100 Marks
English : Communication Skills = 100 Marks.
Commerce : Fundamentals of Accountancy = 100 Marks.

Panel of Examiners: will be selected for setting of Question Papers and evaluation of Papers

Spoken English & Competitive exam guidance classes commence from 5th October for Spoken English and Competitive exam guidance from 22nd Sept onwards (every Saturday 2 PM - 3 PM)

ID Cards: are to be maintained by all PG students.

1. Dr. D. Swapna Sree D. S
2. Dr. M. Farida Begum M. Farida
3. Talat Parveen Talat Parveen
4. L.V. Shoshalani L.V. Shoshalani

KVR GOVERNMENT COLLEGE FOR WOMEN
(AUTONOMOUS)
KURNOOL

MA in English
Syllabus with Effect from 2017-2019

SEMESTER-II

ELECTIVE PAPER : COMMUNICATION SKILLS AND SOFT SKILLS

UNIT-I :LISTENING SKILLS

1.Types of Listening.
2..Barriers to Listening.
3..Tips for Effective Listening.

UNIT-II : SPEAKING SKILLS
1.JAM
2.Conversation skills.
3.Group Discussion..
4.Interview skills.

UNIT-III : READING SKILLS

1..Kinds of Reading.
2..Silent and Loud Reading.
3..Stages of Reading.

UNIT-IV: WRITING SKILLS
1.Punctuation.
2..Paragraph Writing.
3.Resume &CV
4.Covering Letter

204: OPEN ELECTIVE- I: PLANTS AND HUMAN WELFARE

UNIT I: PLANTS AND ENVIRONMENTAL VALUES

Plants and use values-direct (extractive) indirect (ecosystem services) and optional (future possibilities of usage). Human civilization and plants-Agriculture, Horticulture, Forestry, Agroforestry. Plants and landscape ecology-gardening. Plants role in soil protection and water conservation. Plants and climate change-carbon sequestration and carbon credits. Plants in combating pollution- as bioremediants. Poisonous plants; alien and invasive species.

UNIT II: PLANT RESOURCES

Comprehensive account of the following plant resources : Edible resources-Cereals and Millets; Pulses; Spices and Condiments; Fruits and nuts; Vegetables; Starch and Sugar yielding Plants; Oil yielding plants. Plants yielding essential oils, saponins, fibres and cellulose products; gums, resins, rubber; tannins and dye yielding plants. Plants as sources for timber, biofuels and firewood. Forage plants. 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 Andhra Pradesh. Phytomedicine and applications: importance of phytopharmaceuticals, principles of pharmacognosy- classification of drugs. Analytical methods-drug adulteration and evaluation.

UNIT IV: PLANTS AS MODEL ORGANISMS

Introduction to model organisms. Use of model Organism. Major types of model organisms: **Genetic model organisms, Experimental model organisms. Genomic model organisms, genetically modified organisms.** Important model organisms- Prokaryotes and eukaryotes. Brief account on ***Escherichia coli,*** *Chlamydomonas reinhardtii, Arabidopsis thaliana*, *Zea mays, Nicotiana benthamian.* **Transgenic plants. Plant as bioreactors.**

SUGGESTED READINGS

Alan beebay & Anne-Maria Brennan. *2008. First Ecology. 3rd ed. Oxford University Press.*

Cotton, CM. 1996. *Ethnobotany: principles and applications*.

Cunningham, W.P. & M.A.Cunningham 2007. *Principles of Environmental Science-Inquiry and applications*. Tata Mc GrawHill Pub.New Delhi.

Hill, Albert, F.1952. *A text book of useful plants and plant products*. Mc Graw Hill.

Kokate, CK., AP. Purohit & SB. Gokhale. 2000. *Pharmacognosy*. Nirali Prakashan Publ.

Krishnamurthy, K.V. 2004. *Advanced Textbook On Biodiversity: Principles And Practice*. Oxford

Lincol Taiz and Eduardo Zeiger. 2010. Chapter 1- Model organisms in *Plant Physiology*, 5th edition. Sinauer.

Pooja. 2010. *Economic Botany*. Discovery Publishing House.

Rao, Ravi Prasad B. 2005. Biodiversity. In Pullaiah,T. (ed.) *Taxonomy of Angiosperms* Regency Pub. New Delhi. Pp. 287-317.

Rao, Ravi Prasad, B. 2014. *Plant Name Directory*. Anusha Publishers, Hyderabad.

Sambamurthy, A.V.V.S. & N.S. Subramanyam. 2000. *Economic Botany of crop plants*. Asiatech Publishers Inc.

Trease, GE and WC Evans. 2002. *Pharmacognosy*. Saunders. New York.

SEMESTER-I		
		Theory Max. Marks 100

Paper – CM Open Elective: Taxation

Internal Marks: 30 External Marks: 70No. of Hours per Week:5Exam Duration: 3Hrs

Unit-I: Income Tax Act 1961: Basic Concepts, Income, Agricultural Income –Residential Status and Incidence of Tax - Incomes Exempt from Tax.(Theory Only)

Unit-II: Income from Salaries: Chargeability, Deductions, Perquisites, Computation of Salary Income. (Simple Problems)

Unit-III: Income from House Property, Chargeability, and Computation of Income. (Simple Problems)

Unit-IV: Income from Business & Professions (Simple Problems)

Unit-V: Capital Gains and Income from Other Source Computation of Total Income. and Tax Liability. (Simple Problems)

Reference Books:

1. V.K. Singhania & Kapil Singhania, Direct Taxes Law and Practice, Taxman Publications.
2. Bhagavati Prasad, Direct Taxes Law and Practice, Vishwa Prakashan, 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"
CHOICE BASED CREDIT SYSTEM
FIRST YEAR M.Sc. CHEMISTRY
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, chlorofuorocarbons, 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 farms, 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 –SO_2, H_2S, NO, NO_X, NH_3, CO, CO_2, Ozone, organic gases and vapours. Continuous monitoring of air pollutants –principles, monitoring instruments, monitoring of SO_2, H2S, NO-NO_X, CO,CO_2,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).

K. V. R Government College List of Certificate courses offered

S.No	Name of the Department	Title of Course	Year of Initiation	Duration
1	Telugu	TPT & PG Telugu Coaching	2015-16	45 Days
		Mass Communication & Journalism	2011-18	45 Days
2	English	Spoken English	2015 - 16	45 Days
3	Urdu	First Aid	2012-13	45 Days
		Caligraphy	2017-18	45 Days
4	Economics	Research Methods in Economics	2017-18	45 Days
5	History	1.Coaching for Entrences Examinations	2011-12	45 Days
		2.Coaching for Competative Examinations	2015-16	45 Days
		3. Mass Communication & Journalism	2011-18	45 Days
6	Rural Development	1. Rural Development	2011-12	45 Days
7	Psychology	1. Psychological Awareness on Neurotic Problems	2014-15	45 Days
8	Commerce	1.Tally	2014-15	45 Days
		.Tally ERP-9	2015-16	45 Days
		2. Banking & Insurance		45 Days
		3. Fundamentals of Stock Market	2017-18	45 Days
9	Computer Science & Applications	1.Photoshop	2012-13, 2014-15, 2016-17.	45 Days
		2.Graphic Desiging	2015-16	45 Days
10	Botany	1.Vermi Composting	2011-12	45 Days
		2. Floral Arrangement	2013-14	45 Days
11	Zoology	1.Medical Lab Technician(MLT)	2016-17	45 Days
		2.Ornamental Fishes	2017-18	45 Days
12	Chemistry	Fair & Lively	2017-18	45 Days
13	Home Science	1. Gender & Human Rights	2013-14	45 Days
		2. Fashion Designing	2016-17	45 Days
		3.Art & Craft,	2016-17	45 Days
		4.Personality Development	2016-17	45 Days
14	Biotechnology	1. Biopesticides	2012-13	45 Days
		2.Mushroom Cultivation	2013-14	45 Days
		3. Bioinformatics	2014-15	45 Days
15	Biochemistry	1.Medical Lab Technician(MLT)	2014-15	45 Days
		2. Bioinformatics	2011-Till Date	45 Days