KRISHNA UNIVERSITY
DIRECTORATE OF ADMISSIONS

కృష్ణా విశ్వవిద్యాలయం

ADMISSION INFORMATION BROCHURE

KRUCET – 2016

Admission into P.G. Courses offered by Krishna University Campus College, Krishna University Dr. MRAR PG centre, Nuzvid & Colleges affiliated to Krishna University

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Note - 1 : SCHEDULE OF KRUCET – 2016

Cost of Application (Application Fee Rs.100/- + Application Registration & Processing Fee Rs.250/-)		Rs.350/-
1	Notification Released on	11.03.2016
2	Commencement of Submission of Online Applications	11.03.2016
3	Last date for submission of Online Applications without Late Fee	20.04.2016
4	Last Date for submission of Online Applications with Late fee of Rs.500/-	24.04.2016
5	Schedule of Entrance Tests (Tentative)	02-05-2016
6	Downloading Hall-Tickets from website (www.krudoa.in)	20-04-2016 onwards

Note – 2 : List of enclosures

The following Original Certificates are to be submitted at the Time of Counseling	
1	KRUCET – 2016 Application, Hall Ticket
2	KRUCET – 2016 Rank Card
3	Transfer Certificate & Conduct Certificate from the college last studied
4	Degree Provisional Certificate / Original Degree
5	Degree Mark Memos of Three Years
6	Reserved Category / Permanent Caste Certificate issued in 2016 from Mee Seva (for SC, ST and BC Candidates if reservation is claimed)
7	S.S.C / Date of Birth Certificate
8	Intermediate or equivalent Certificate
9	Income Certificate issued in 2016 from Mee Seva (if fee concession is claimed)
10	Study Certificates (from 9th Class to Degree final year) / Residence Certificate of last Seven Academic Years (from Mee Seva issued in 2016) / Form-I or II or III or IV as given in Annexure - A pertaining to claim of Local Candidate
11	Copy of the Relevant Certificates issued from concerned authorities if Special Reservation is claimed under PH/ NCC/ SPORTS/ CAP
12	Migration Certificate (Student studied other than Krishna University)
13	Declaration form as given in Annexure-B
14	Two sets Xerox copies of above mentioned certificates and Two Passport size photos
No Candidate will be allowed into the Counseling Hall without Provisional Certificate (P.C) and Transfer Certificate (T.C).	

NOTE: Candidates admitted through KRUCET - 2016 PG Entrance Test and Counseling are eligible for Fee Reimbursement as per the norms of Government of Andhra Pradesh.

ADMISSION INFORMATION BROCHURE – KRUCET – 2016

Directorate of Admissions, Krishna University, Machilipatnam, invites applications from the eligible candidates for admission through Krishna University Entrance Test (KRUCET-2016) into various Courses offered in Campus College of Krishna University, Krishna University Dr. MRAR P.G Centre, Nuzvid, and Colleges affiliated to Krishna University offering P.G. Courses for the academic year 2016-2017.

Eligible candidates are required to read the instructions carefully before filling the KRUCET-2016 online applications. Candidates seeking admission into various courses of study should appear for KRUCET-2016. Candidates who have already passed their qualifying degree examination or who have appeared / appearing for the annual examination in 2016 only are eligible for KRUCET-2016. However, candidates qualified in advanced supplementary examinations of 2016 are also eligible.

Eligibility criteria for different courses and different Tests to be conducted are given in the Krishna University Admission Information Brochure. Candidates from other recognized universities are considered for admission into PG courses only if they possess a three year Bachelor Degree in the pattern of 10+2+3 or in 12+3 or in 11+1+3 pattern, with the prescribed minimum percentage of marks.

ALLOWING A CANDIDATE FOR KRUCET-2016 DOES NOT GUARANTEE THE RIGHT OF ADMISSION INTO ANY COURSE OF STUDY. A candidate must satisfy the eligibility criteria as prescribed in the Admission Information Brochure. Candidates obtaining admission by furnishing false information are liable for prosecution and cancellation of seats. **The decision of the Directorate of Admissions is final in all respects.**

Candidates seeking admission are advised to go through the Krishna University Admission Information Brochure carefully before filling the Online application form. Proper care should be taken while filling the respective categories of reservation in Online Application form.

Requests for inclusion or change of test, test centre and / or reservation category(ies) once filled will not be entertained under any circumstances. The Online applications will be processed as per the information furnished by the candidates only.

Candidates who have already studied a P.G. course are not eligible to write the test leading to admission into the same course. Such candidates are liable for disciplinary action as per the rules of university.

The university reserves the right whether to fill or not to fill the seats earmarked for a particular course. All admissions are purely provisional and the university reserves the right to cancel the admission at any stage. Further it also reserves the right to run or not to run a particular course depending on the number of candidates joined in it.

Medium of instruction for all PG courses except languages offered will be in English. Hence the candidates must write the examinations in English only.

Krishna University reserves the right to: (i) allot a Centre other than the candidate's choice, (ii) conduct or not to conduct any test and (iii) cancel a Test/Test-Centre based on the number of candidates opted for the Test / Test Centre.

When the number of applications are less than the number of seats for any test, the test will not be conducted and admissions will be made based on the marks obtained in qualifying degree.

All disputes pertaining to KRUCET-2016 shall fall within the jurisdiction of Machilipatnam only.

పీ.జి. కోర్సుల ప్రవేశ సమయంలో అన్ని ఒరిజినల్ సర్టిఫికెట్స్ విదిగా సమర్పించవలెను. దూరవిద్య ద్వారా ప్రవేశ అర్హత పొందిన విద్యార్థులు కూడా టి.సి., సి.సి., మైగ్రేషన్ సర్టిఫికెట్ మరియు ప్రొవిజనల్ సర్టిఫికెట్లు తప్పనిసరిగా సమర్పించవలెను.

Admission into P.G. Courses in Krishna University Campus, Krishna University Dr. MRAR PG Centre, Nuzvid and Affiliated Colleges for the Academic Year 2016-17 will be made for courses mentioned in **Table I, Table II, Table III & Table IV.**

Table - I
Courses offered at Krishna University Campus, Machilipatnam

Sl. No.	Test Code	Name of the Course	Intake	Eligibility Criteria	Syllabus for test	Couse Code
1	15	M.A. Journalism and Mass Communications	30	Any Graduate	As per KRUCET syllabus	119
2	12	M.A. (English)	30	B.A/B.Sc., /B.Com/ B.B.M, B.C.A, B.A (O.L) in Telugu/B.A (O.L) Sanskrit with general English, Degree in Hotel Management, B.A with special English in the group subjects.	As per KRUCET test syllabus	116
3	14	M.A. (Telugu)	30	B.A. / B.Sc., / B.Com. /B.B.M / B.C.A. / Degree in Hotel Management with Telugu as second language, B.A (O.L) in Telugu/ Sanskrit or B.A with special Telugu.	As per KRUCET Telugu syllabus	118
4	04	M.Sc., Chemistry (Pharmaceutical Chemistry)	30	B.Sc. with chemistry as main or one of the three equal subjects in common core system / B. Pharmacy.	As per KRUCET Chemistry syllabus	106
5	05	M.Sc., Electronics and Instrumentation. Industry Collaborated Course (with Eftronics Systems Pvt. Ltd., Vijayawada)	30	A pass in B.Sc., with any one of the following subjects: Electronics / Computer Science / Instrumentation. Passed / Appeared in B.Tech (Electronics) B. Tech (Computer Science) B.E (Electronics)/B.E (Computer Science), B.Tech., (instrumentation), etc.,	As per KRUCET Electronics syllabus	108
6	02	M.Sc., Biotechnology	30	Students who have completed / appeared 10+2+3 level in life sciences subjects	As per KRUCET syllabus	102
7.	05	M.Sc., Electronics	30	A pass in B.Sc. with Mathematics, Electronics as the subjects of equal importance.	As per KRUCET Electronics Syllabus	107
8.	04	M.Sc., Organic Chemistry	36	B.Sc., with Chemistry as main or one of the three equal subjects in common core system.	As per KRUCET Chemistry syllabus	104
9	04	M.Sc., Inorganic Chemistry	36	B.Sc., with Chemistry as main or one of the three equal subjects in common core system.	As per KRUCET Chemistry syllabus	124

10.	03	M.Sc., Botany	30	B.Sc., with Botany and Chemistry as the two of the common Core subjects or B.Sc., with Botany as main and Chemistry as ancillary.	As per the KRUCET Botany syllabus	103
11	09	M.Sc., Zoology	30	B.Sc., with Zoology as one of the subjects	As per the KRUCET Zoology syllabus	113
12	17	M. Com	40	All B.Com Graduates	As per KRUCET Commerce syllabus	121
13	18	M.Ed.	35	B.Ed.	As per KRUCET B.Ed. Syllabus	122
14	15	* P.G. Diploma in Kuchipudi Dance (Sutra Dhār)	30	Any Degree and a certificate course in Kuchipuidi Dance	As per KRUCET syllabus	128
15	--	*Diploma in Kuchipudi Dance	30	Intermediate and a certificate course in Kuchipudi Dance (or) its equivalent	---	129
16	--	*Certificate Course in Kuchipudi Dance	30	10^{th} Class	---	130

*Course with codes 128,129,130 will be in association with Akila Bharata Kuchipudi Natya Kala Mandali, Kuchipudi, Krishna District.

Table - II
Courses offered at Krishna University Dr. MRAR PG Center, Nuzvid

S. No.	Test No:	Name of the Course	No. of Seats	Subject Code
1	08	M.Sc., Physics	36	112
2	04	M.Sc., Analytical Chemistry **	36	105
3	06	M.Sc., Applied Mathematics	30	110
4	06	M.Sc., Mathematics (*SF)	30	109
5	01	M.Sc., Biochemistry **(*SF)**	30	101
6.	17	M.Com **(*SF)**	40	121
7	04	M.Sc., Organic Chemistry (***SF**) **	36	104
8	04	M.Sc., Physical Chemistry (***SF**)	36	123
9	19	M.Sc. Statistics (***SF**)	30	127

(*SF- Self Finance)

****Krishna University** has entered into **Memorandum of Understanding (MOU)** With **LAURUS Labs** for Industry attachment to carry out the Fourth Semester Project Work of students admitted into Organic and Analytical Chemistry Courses. LAURUS labs will pay an amount of Rs. 5000/- per month for 50 Students during the Project Work Period. LAURUS Labs will provide employment Opportunity based on the performance and Suitability of the Candidate.

Table - III
Courses offered at Krishna University Affiliated Colleges

S. No.	Test No:	Name of the Course	Subject Code
1	11	M.A. ECONOMICS	115
2	12	M.A. ENGLISH	116
3	17	M.Com.	121
4	18	M.Ed.	122
5	14	M.A. TELUGU	118
6	16	M.H.R.M	120
7	08	M.Sc., PHYSICS	112
8	01	M.Sc., BIOCHEMISTRY	101
9	03	M.Sc., BOTANY	103
10	04	M.Sc., ORGANIC CHEMISTRY	104
11	04	M.Sc., ANALYTICAL CHEMISTRY	105
12	10	M.Sc., COMPUTER SCIENCE	114
13	05	M.Sc., ELECTRONICS	107
14	06	M.Sc., MATHEMATICS	109
15	07	M.Sc., MICROBIOLOGY	111
16	09	M.Sc., ZOOLOGY	113
17	02	M.Sc., BIOTECHNOLOGY	102
18	13	M.A. SOCIAL WORK	117
19	15	M.Sc., VISUAL COMMUNICATIONS	125
20	15	PG DIPLOMA IN E-BANKING	126

Admissions will be given on the basis of the rank obtained by the candidate in the Entrance Test KRUCET-2016, conducted by Krishna University, subject to the fulfilment of eligibility criteria.

I. TENTATIVE PLACES OF ENTRANCE TESTS:

1. MACHILIPATNAM **2. VIJAYAWADA** **3. NUZVID** **4. GUDIVADA**

5. TIRUVURU **6. VISANNAPETA** **7. NANDIGAMA** **8. VUYYURU**

- The candidate has to choose an examination centre from among the places mentioned above in online application form.
- Candidates applying for more than one test are advised to opt for the same centre as there is a possibility of overlap of dates for both the tests.
- Requests for the change of test Centre and subject opted by the candidate in the online application form will not be considered under any circumstances.
- The final allotment of the examination centre rests with the Director, Directorate of admissions.
- **The exact date, time and venue of test centre will be given along with the hall ticket.**
- **Candidate have to download their hall tickets and schedule of entrance examination from the Krishna University website www.krishnauniversity.ac.in or www.krudoa.in**

కృష్ణా యూనివర్సిటీ, అనుబంధంగా ఉన్న పి.జి. సెంటర్ నుజివీడు మరియు దాని అనుబంధ కళాశాలలోని కోర్సులకు ప్రవేశ పరీక్ష జరుగుతుంది.

II. VERY IMPORTANT:

1. **Separate Application must be submitted for each test/course.**
2. Admissions into the courses listed in Krishna University Campus College mentioned in Table - I, Krishna University Dr. MRAR PG Center, Nuzvid mentioned in Table-II and Krishna University affiliated colleges mentioned in Table -III, will be made on the basis of the rank obtained in the entrance test.
3. CANDIDATES WHO HAVE COMPLETED THEIR QUALIFYING EXAMINAITON OR APPEARED FOR THE FINAL YEAR EXAMINATION IN MARCH/APRIL 2016 ARE ELIGIBLE TO APPEAR FOR THE ENTRANCE TEST.
4. There is no provision for revaluation, retotaling or personal verification of scripts of Entrance Tests.
5. All candidates who apply for entrance test satisfying the eligibility criteria will only be allowed for appearing the Entrance test
6. Allowing a candidate for the Entrance Test does not provide any claim or right for admission into P.G. Courses. They have to satisfy the eligibility criteria given in Tables - I and IV respectively. The decision of admitting authority is final in all such matters.
7. Candidates who wish to take admission into the P.G. Courses offered by minority colleges are also required to appear for the entrance test(s) conducted by the University.
8. Selected candidates (who are given ranks) should produce all the original certificates along with one set of attested photocopies of certificates listed in Note-2 to the counselling.
9. Copies of Certificates submitted to this office will not be returned. Selected candidates should produce all the original certificates at the time of counseling. Otherwise they will forfeit their seats.
10. Incomplete application will not be considered. No notice will be taken in respect of any communication(s) or document(s) sent by the candidates after the submission of his/her application.
11. Candidates admitted to KRUCET-2016 and subsequently getting admission by furnishing false / incorrect information / indulging into any other kinds of fraudulent methods are liable for prosecution and cancellation of their admission without notice.
12. There is no age limit for the admission into any PG Courses however those candidates who crossed the age of 30years for OC, 34 years for BC, SC and ST are eligible for claiming / applying any fee reimbursement (as per memo no. 10537/ SW .Edn. 2/2011, dated 01/11/2011.
13. PG Degree holders of a particular course/ subject are not entitled for admission into the same course / subject in Krishna University and its affiliated colleges. However a PG Degree holder who wishes to pursue another PG Course in a different discipline may be given admission but not eligible for hostel admission, any scholarship/ exemption of any fee applying for reimbursement etc.,.
14. No candidate is entitled to pursue more than one full time course at a time. If admitted, no candidate can undertake any other full time assignment / employment / study of any other full time course simultaneously.
15. HALL TICKET SHOULD BE RETAINED BY THE CANDIDATE EVEN AFTER THE ENTRANCE TEST AS IT IS REQUIRED AT THE TIME OF COUNSELLING FOR ADMISSION THROUGH KRUCET-2016.

అడ్మిషన్లు పూర్తి అయ్యేంత వరకు విద్యార్థులు హాల్ టికెట్‌ను దాచి ఉంచుకోవాలి. ఎడ్మిషన్ సమయంలో హాల్ టికెట్‌ను, ర్యాంకు కార్డును సమర్పించవలసి ఉంటుంది.

III. HALL TICKETS:

1. Hall tickets will not be sent to the candidates by post they have to download from the website www.krudoa.in or www.krishnauniversity.ac.in before the date of Entrance Test by making use of application number. In case any problem advised to contact the Director immediately through E-mail : dirkruadmissions@gmail.com. Facility of downloading hall tickets will also be arranged at the concerned examination Centre's. You may contact the Chief Superintendent of the examination centre one day before the Entrance Test on production of the following:
   i) Proof of submission of Online application form.
   ii) One attested passport photograph
   iii) Crossed Demand Draft for Rs. 50/- drawn in favour of DIRECTOR, DIRECTORATE OF ADMISSIONS, Krishna University on Andhra Bank, A/C No.034610100039832 (Code No. ANDB0000346) at Andhra Bank, Founders Branch, Machilipatnam.

IV. CONDUCT OF ENTRANCE TEST:

1. No candidate will be admitted into examination hall without Hall-Ticket.
2. The Entrance Test will have 100 objective multiple choice type questions. The question paper generally will consist of three sections viz., Sections A and B with 30 question each and Section C with 40 questions. In case of tie priority in ranking is given on the basis of marks obtained in Section C followed by Section B. For some subjects the number of questions may be less.
3. Candidates have to indicate their answers only on the OMR Sheet provided along with the Question Paper.
4. **Candidates have to bring good quality HB Pencil and eraser for marking on the OMR Sheet. (Candidates are required to go through instructions given on the OMR Sheet for answering questions in the Examination).**

   (పరీక్ష వ్రాయుటకు మంచి నాణ్యత కలిగిన హెచ్.బి. పెన్సిల్‌ను, రబ్బర్‌ను వాడాలి).
5. Books / Tables / Mechanical / Electronic aids / Cell Phones / Mobile Phones/Pagers are not allowed in the Examination Hall. Possession of these items in the Examination hall is an offence and disciplinary action will be taken by the Chief Superintendent of the Examination center.
6. Candidate will not be admitted into the Examination Hall after a lapse of **15 minutes** after commencement of the test. No candidate will be allowed to leave the Examination Hall before one hour after the commencement of the test.
7. No material should be removed from the test booklet.
8. The Chief Superintendent of the Centre may take disciplinary action against candidates for violation of any of the examination rules or for indulging in malpractices. All cases of malpractices in the examination will be dealt in accordance with the University rules.

9. All candidates who appear for entrance test will not be given ranking. Depending upon the availability of seats in a particular course, the University has the right to prescribe cut off marks for giving rank in that course.

V. HOW TO APPLY:

1. A Candidate has to carefully fill online application along with all the enclosures. correct mobile number and Email address should be given so that all information will be sent to mobile or mail ID.

VI. COUNSELLING FEE:

1. Science and Education courses fee for first counseling Rs. 1000/- for Second counseling Rs.1300/ and for third counseling Rs.1500/-, 2.Arts, Commerce and other courses fee for first counseling Rs. 500/- for Second counseling Rs. 800/ and for third counseling Rs.1000/-,

VI(a). SLIDING:

1. A candidate after given allotment in a college will be allowed for sliding into another college or course subject to availability of seat in another college on payment of a nominal sliding fee of Rs.300/-. Sliding is restricted for two times for any candidate. For second sliding, the candidate is required to pay an amount of Rs.500/- No further sliding will be allowed under any circumstances.

VII. CANCELLATION:

1. A candidate after getting allotment of the seat in a course will be required to join the college on or before the date given for reporting the college. Failing to report the college by the candidate the seat allotted will be cancelled and another candidate in the order of merit will be admitted into that vacancy.
2. A seat allotted to a candidate can be cancelled on request if he/she gets a seat in another University or gets a job.
3. If the seat allotted to a candidate is cancelled for reasons mentioned in 1&2, the tuition fee paid by the candidate will be refunded after deducting 15% of the tuition fee prescribed for that course.

(విద్యార్థి కట్టిన ఫీజు కాకుండా, మొత్తం కోర్సు ఫీజులో 15% ఫీజు కాన్సిలేషన్ ఫీజుగా వసూలు చేయబడుతుంది. కొన్ని సందర్భాలలో విద్యార్థులే డబ్బుకట్టి, కాన్సిలేషన్ చేయించుకోవలసి ఉంటుంది. ఈ విషయాన్ని విద్యార్థులు దృష్టిలో ఉంచుకోవాలి)

4. However, cancellation of seat is allowed only before the closure of the admissions for the academic year **2016-17.**
5. If a candidate wants to cancel the seat after the closure of the admissions, he/she is required to pay the fee for the second year of the course also.

VIII. INCOMPLETE APPLICATION:

Incomplete / ineligible Online applications will not be accepted and the Directorate is not obliged to send any communication to the candidate in this regard.

Candidates admitted to Entrance test and subsequently getting admission by furnishing false / incorrect information are liable for prosecution and cancellation of their admission without notice.

IX. SELECTION FOR ADMISSION:

1. Selection for admission shall be based on the rank obtained in the Entrance Test for courses mentioned in Table-I, Table-II, Table-III and Table-IV.
2. The order of merit will be decided on the basis of marks obtained in the Entrance Test. In case of tie, priority in ranking is given on the basis of marks obtained in Section C followed by Section B in the entrance test. In case of a further tie between the candidates with same marks, the tie will be resolved on the basis of date of birth in favour of older candidates.
3. Rank Cards will not be sent to the candidates they are to be downloaded from the website www.krudoa.in or www.krishnauniversity.ac.in . In case the candidate requires a duplicate Rank Card, it will be issued on payment of Rs. 50/- by crossed D.D. in favor of Director Directorate of Admissions, KRUCET- 2016. Andhra Bank A/C No.034610100039832 (Code No. ANDB0000346).at Andhra Bank, Founders branch, Machilipatnam.
4. Admission of the candidate into any of the Courses is subject to the fulfillment of eligibility criteria besides obtaining rank in the entrance test.
5. If any candidates fails to report to the admitting authorities when his/her rank/ name is announced, he / she will be considered for admission at the end of that session / day subject to availability of seats.
6. The University cannot accept any explanation for any delay in reporting to the allotting authorities and a student forfeits his/her right to admission based on his/her rank if he/she fails to respond to the call during the counseling with all the necessary original certificates.

X. INSTRUCTIONS TO THE CANDIDATE

1. Separate Online application should be submitted for each course even though eligibility criteria is fulfilled. However, a single Online application is enough for each course for admission into the University College / PG Centers / Affiliated Colleges.
2. Online Application must be filled together with all required enclosures
3. No Notice will be taken of any communication(s) or document(s) sent separately.
4. Submission of incorrect information or suppression of information or forgery of signatures or fabrication of certificates or other fraudulent methods will entail cancellation of seat without notice.
5. Applicants are advised to fill the marks in the columns specified in the Online application form Carefully.
6. Incomplete or defective Online applications will not be accepted.
7. In addition to the marks obtained in the qualifying examination, admission is subject to the general rules and conditions of the University
8. Candidates selected for the Counseling will be informed by the Email id (or) SMS and each candidate is advised to check from the websites.
9. If any candidates fails to report to the admitting authorities when his/her rank/ name is announced, he / she will be considered for admission at the end of that session / day subject to availability of seats.
10. The University cannot accept any explanation for any delay in reporting to the allotting authorities and a student forfeits his/her right to admission based on his/her rank if he/she fails to respond to the call during the counseling with all the necessary original certificates.

XI. ELIGIBILITY CRITERIA

GENERAL ELIGIBILITY CONDITIONS FOR ALL COURSES:

a) The candidates should satisfy the prescribed academic eligibility criteria for the respective courses as given under specific eligibility criteria. Candidates should submit all the original certificates in support of their eligibility at the time of counseling failing which the candidates will forfeit the claim for admission.

b) Candidates who have already completed one P.G. course (Professional or non Professional) will not be considered for any type of scholarship whatsoever, as per G.O.s. in force. As per Govt of A.P. Social Welfare (Edn) Department Memo No. 10537 / Sw. Edn. 2/2011 dated : 01.11.2011. The Maximum eligible age for obtaining scholarship in respect of SC, ST and BC is 34 years and in respect of EBC / Minorities / Disabled is 30 years for PG and above courses

TABLE-IV

***SPECIFIC ELIGIBILITY CRITERIA FOR DIFFERENT COURSES**

Subject Code.	Course	Eligibility
101	M. Sc., Biochemistry	B.Sc., with Chemistry or Biochemistry or B.Sc., (MLT) as one of the subjects.
102	M.Sc., Biotechnology	Bachelor's Degree in Physical / Biological Sciences / B.Sc. in Farm Science / B.Sc., Ag. / B.V.Sc., / Bachelor's Degree in Medicine or Pharmaceutical Sciences / B.E/ B.Tech.
103	M. Sc., Botany	B.Sc., with Botany and Chemistry as the two of the common Core subjects or B.Sc., with Botany as main and Chemistry as ancillary.
104	M. Sc., Organic Chemistry	B.Sc., with Chemistry as main or one of the three equal subjects in common core system.
105	M.Sc. Analytical Chemistry	B.Sc., with Chemistry as main or one of the three equal subjects in common core system
106	M.Sc., Chemistry (Pharmaceutical Chemistry)	B.Sc., with chemistry as main or one of the three equal subjects in common core system/B. Pharmacy.
107	M. Sc., Electronics	A pass in B.Sc., with Mathematics, Electronics as the subjects of equal importance.
108	M.Sc., Electronics and Instrumentation (Industry Collaborated Course).	A pass in B.Sc., With any one of the following subjects: Electronics / Computer Science / Instrumentation. Passed / Appeared in B.Tech. Electronics, B.Tech (Computer Science), B.E. (Electronics) / B.E. (Computer Science), B.Tech (Instrumentation), etc.
109	M. Sc., Mathematics	B.Sc., or B.A. with Mathematics as one of the three equal subjects or as main subject
110	M. Sc., Applied Mathematics	B.Sc., or B.A. with Mathematics as one of the three equal subjects or as main subject
111	M. Sc., Microbiology	B.Sc., with Microbiology or Botany as one of the three subjects and Chemistry or Biochemistry as another subject
112	M. Sc., Physics	B.Sc. Mathematics, Physics and any other third subject under common core scheme.
113	M. Sc., Zoology	B.Sc., with Zoology as one of the subjects
114	M.Sc. Computer Science	A pass in any Graduate program with computers as one of the subjects of study.
115	M.A. Economics	B.A. with Economics as one of the Subjects.
116	M.A. English Lang. & Literature	B.A., / B.Sc.,/B.Com.,/B.B.M.,/B.C.A / B.A. (O.L.) in telugu / B.A. (O.L.) Sanskrit with general English, Degree in Hotel Management, B.A. with special English in the group subjects.
117	M.A. Social Work	Any Graduate
118	M.A. Telugu Lang. & Literature	B.A. special Telugu, B.A.O.L. Telugu, B.A.O.L. Sanskrit, B.A., / B.Sc,. / B.Com. / B.B.M/ B.C.A. with Telugu under Part I or Part II, BOL Telugu / Bhasha Praveena with POL.
119	M.A. Journalism and Mass Comm.	Any Graduate
120	MHRM	Any Graduate
121	M. Com.	All B.Com Graduates
122	M.Ed.	B. Ed.,
123	M.Sc., Physical Chemistry	B.Sc., with Chemistry as main or one of the three equal subjects in common core system
124	M.Sc., Inorganic Chemistry	B.Sc., with Chemistry as main or one of the three equal subjects in common core system
125	M.Sc., Visual Communications	Any Degree
126	PG Diploma in E-Banking	Any Degree

127	M.Sc. Statistics	B.A/B.Sc., with Mathematics and Statistics as two of the Three Subjects or B.Tech in any Branch.
128	P.G. Diploma in Kuchipudi Dance (Sutra Dhār)	Any Degree and a certificate course (or) diploma in Kuchipudi Dance
129	Diploma in Kuchipudi Dance	Intermediate and a certificate course in Kuchipudi Dance (or) its equivalent
130	Certificate Course in Kuchipudi Dance	10^{th} Class

XII : RESERVATIONS

Admission to various courses of study will be made on the basis of merit, subject to the following reservations.

a. **Local Candidates:** 85% of the available seats in each category in every course of study are reserved in favour of the local candidates. Candidates claiming reservation under this category shall enclose a local candidate certificate in the appropriate form given in Annexure-B

b. **Other Category Reservations:**

i) Scheduled Caste (SC) : 15%
ii) Scheduled Tribes (ST) : 06%
iii) Backward Communities (BC) : 29% (A-7%; B-10%; C-1%; D-7%; E-4 %)
iv) Physically Handicapped (PH) : 03%
v) Sports : 0.5%
vi) NCC : 01%
vii) Cap (Children of Armed Personnel) : 02%
viii) Women : 33.3% in O.C. and in each of reservation categories

iX) **THE RULES OF RESERVATION THAT ARE IN FORCE AT THE TIME OF ADMISSION SHALL BE FOLLOWED**

X) Admissions made under BC-E category are subject to final decision of honorable High Court of A.P.

Note:

1. S.C., S.T. and B.C. candidates should submit the caste certificate in original as given in Annexure-A (Form-I or II whichever is applicable) certificates by Mandal Revenue Officer / Attested Photostat copy of permanent caste certificate.
2. Physically Handicapped candidates should submit the certificate of their disability issued by the concerned specialist government doctor (Professor's rank) / Medical Board.
3. For claiming admission under N.C.C and Sports quota the candidates submit relevant Certificates.
4. Incase of CAP, the certificates, issued by the Zilla Sainik Welfare Officer in respect of Ex-service and service certificate in respect of those in service, will alone be considered.

XIII. PARTICULARS OF SEATS AVAILABLE AND FEE STRUCTURE:

Krishna University	**:**	**Appendix - I**
Krishna University Dr. MRAR PG Centre, Nuzvid	**:**	**Appendix - II**
Fee particular for admission into Affiliated Colleges	**:**	**Appendix - III**
Courses offered through KRUCET-2016	**:**	**Appendix - IV**
Test-Wise Syllabus	**:**	**Appendix - V**

Sponsored seats are reserved for in service candidates/candidates sponsored by industry / educational / commercial establishments. The Candidates seeking admission under sponsored category are required to submit the sponsorship letter/certificate at the time of counseling and pay the entire fee.

Refund of Fee: Fee once paid will not be refunded unless the seat is vacated by the candidate before the closure of admissions and until such vacancy is filled with a suitable Candidate. However, special fee, lab fee and admission processing fee will not be refunded. Refund of Fee in respect of payment seats and self finance courses will be made as per the University rules in vogue.

Fee concession for SC and ST candidates will be allowed (subject to conditions of self financing courses) as per G.O's issued by the Government on submission of original caste and income certificates issued by Mandal Revenue Officer only. Candidates have to submit the caste and income certificates issued by Mandal Revenue Officer, failing which no concession will be given at the time of admission. The **income certificate is valid only for one year from the date of issue**. Eligible candidates are entitled for reimbursement of fee which is limited to Rs. 20,000/- (G.O. M.S. 56, S.W. Edn.-2. Dept dated 6.10.2003.)

If the fee to be paid by such candidates is more than Rs. 20,000/- they have to pay remaining amount of fee at the time of admission itself.

No time for production of income certificate at a later date or payment of remaining amount of money will be given.

Candidates who belong to other Universities shall pay Rs. 100/- as recognition fee in addition to tuition fee.

Note: (1) In case the parents are not alive, a certificate to that effect and income certificate of Guardian duly certified by Mandal Revenue Officer should be submitted.

(2) Fee once remitted will not be refunded under any circumstances and fee is also not transferable. For admission into University College the candidates are advised to pay fee only after their admission is approved by the Principal.

(3) The Fee concession in respect of **S.C. / S.T. / B.C**. will be followed as per the **G.O's** in vogue.

XIV. GENERAL INSTRUCTIONS:

టి.సి., ప్రొవిజనల్ సర్టిఫికెట్స్ లేకుండా ఎటువంటి పరిస్థితులలోను ఎడ్మిషన్ ఇవ్వబడదు.

1. **Admissions are made under SEMESTER SYSTEM of examinations without supplementary examinations, and with an internal assessment component.**
2. **University does not provide any transport facilities for any purpose. However, students can make use of the concessional APSRTC student bus pass facility.**
3. **Examinations will be conducted as per University schedules and will not be Postponed under any circumstances.**
4. **75% attendance of classes is compulsory. Condonation may be granted to only those who have put in at least 60% of attendance on production of evidence with sufficient ground.**
5. **If a student discontinues a course after admission, he/she will not be readmitted into the course later.**
6. **A student's name will be removed from the rolls without any notice if he/she is absent continuously for a period of one month.**
7. **Students of this University are prohibited from simultaneously pursuing another full time course of study here or elsewhere or employment or profession.**
8. **Transfer Certificate (T.C.) and Conduct Certificate (C.C.) once submitted will not be returned.**
9. **Candidates claiming reservation under S.C., S.T. and B.C. categories are advised to submit the correct caste certificate and income certificate. If any information furnished in this regard is found to be incorrect at a later date, the candidate will forfeit the seat and will be liable for prosecution.**
10. **Students who are eligible for scholarships may get scholarship for a maximum period of 10 months in an academic year. They are neither eligible for vacation money nor scholarship beyond ten months in an academic year. The University makes no commitment towards any scholarship amount due from the Government.**
11. **Admissions are according to the rules and criteria made from time to time by the authorities of the University.**
12. **The University reserves the right to cancel or postpone the admission into any course.**
13. **Duly filled in declaration form given an Annexure-C should be submitted along with the application.**
14. **If any student is found responsible for defacing the walls or any permanent structures within the campus or destruction of University property he/she is liable for expulsion from the University.**

GS-General Seats; SF-Self Finance Seats

Fee structure is subject to final decision of the high power committee on rationalization for P.G. Courses.

KRISHNA UNIVERSITY COLLEGE, P.G. CENTRE COURSES, SANCTIONED STRENGTH AND FEES PARTICULARS FOR THE ACADEMIC YEAR 2016-2017.

APPENDIX - I

FEE PARTICULARS OF KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

Sl. No	Course	Tution Fee	Special Fee	Other Fees						INTAKE
				Lab Fee including Caution Deposit	Placement Registration Fee	T.C. Fee	Tour Fee	Insurance Premium Fee	Total Fee	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	M.A. (English)	6600	1450	700	150	50	0	0	8950	30
2	M.A. (Telugu)	5533	1450	700	150	50	0	0	7883	30
3	M.Sc., Chemistry (Pharmaceutical Chemistry) **(*SF)**	22000	1450	2000	150	50	0	0	25650	36
4	M.A. Journalism and Mass Communications	6600	1450	700	150	50	0	0	8950	30
5	M.Sc.,(Bio-technology) 2 years **(*SF)**	55000	1950	2000	150	50	0	0	59150	30
6	M.Sc., Electronics and Instrumentation **(*SF)**	26400	2020	3400	150	50	0	0	32020	30
7.	M.Sc., Electronics **(*SF)**	26400	2020	3400	150	50	0	0	32020	30
8.	M.Sc., Organic Chemistry **(*SF)**	22000	1450	2000	150	50	0	0	25650	36
9	M.Sc., Inorganic Chemistry **(*SF)**	22000	1450	2000	150	50	0	0	25650	36
10.	M.Sc., Botany **(*SF)**	19800	1450	2000	150	50	0	0	23450	30
11	M.Sc., Zoology **(*SF)**	19800	1450	2000	150	50	0	0	23450	30
12	M.Com**(*SF)**	5533	1450	850	150	50	0	0	8033	40
13	M.Ed. **(*SF)**	23100	3300	0	0	0	0	0	26400	35
14	P.G. Diploma in Kuchipudi Dance (Sutradhar) **(*SF)**	16000	0	0	0	0	0	0	16000	30
15	Diploma in Kuchipudi Dance**(*SF)**	12000	0	0	0	0	0	0	12000	30
16	Certificate Course in Kuchipudi Dance **(*SF)**	10000	0	0	0	0	0	0	10000	30

(*SF- self finance course)

APPENDIX - II

KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

S.No.	Subject	No. of Seats	Tuition Fee	Special Fee	Other Fee	Total Fee
1	M.Sc., Physics	36	6600	1510	1210	9320
2	M.Sc., Analytical Chemistry	36	22000	1450	2350	25800
3	M.Sc., Applied Mathematics	30	6600	670	730	8000
4	M.Sc., Mathematics**(*SF)**	30	13200	670	730	14600
5	M.Sc., Biochemistry**(*SF)**	30	22000	1450	2320	25770
6	M.Com**(*SF)**	40	5533	1450	1050	8033
7	M.Sc., Organic Chemistry (*SF)	36	22000	1450	2350	25800
8	M.Sc., Physical Chemistry **(*SF)**	36	22000	1450	2350	25800
9	M.Sc. Statistics (***SF**)	30	16185	1815	300	18300

(*SF- self finance course)

Note:- Fee structure is subject to final decision of the high power committee on rationalization for P.G. Courses.

APPENDIX - III

FEE PARTICULAR FOR ADMISSION INTO AFFILIATED COLLEGES

S.No.	Subject	Tuition Fee	Special Fee	Other Fee	Total Fee
1	M.A. Economics	6600	1250	0	7850
2	M.A. English	6600	2000	0	8600
3	M.Com	5500	3435	175	9110
4	M.Ed.,	23100	3000	0	26100
5	M.A. Telugu	5533	2700	0	8233
6	MHRM	12100	0	0	12100
7	M.Sc., Physics	19800	200	1640	21640
8	M.Sc., Biochemistry	26400	0	0	26400
9	M.Sc., Botany	19800	200	1180	21180
10	M.Sc., Organic Chemistry	26400	200	4030	30630
11	M.Sc., Analytical Chemistry	26400	200	4030	30630
12	M.Sc., Computer Science	26400	0	0	26400
13	M.Sc. , Electronics and Instrumentation	26400	6870	0	33270
14	M.Sc., Mathematics	13200	3835	175	17210
15	M.Sc., Microbiology	26400	570	2500	29470
16	M.Sc., Zoology	19800	0	0	19800
17	M.Sc., Biotechnology	55000	5260	0	60260
18	M.A Social Work	5500	1000	0	6500
19	M.Sc., Visual Communications	23000	2000	8000	33000
20	PG Diploma in E-Banking	15000	-	-	15000

***Fees given are tentative. The actual fee to be paid at the time of admission will be intimated along with counseling letter.**

Note: The number of seats available in each course will be intimated in the admission counseling letter.

APPENDIX - IV

COURSES OFFERED THROUGH KRUCET-2016

M.SC., BIOCHEMISTRY: (1) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

M.Sc., BIOTECHNOLOGY: (1) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (2) MONTESSORI MAHILA KALASALA, VIJAYAWADA.(3) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., BOTANY: (1) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (3) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET, (4) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA. (5) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., COMPUTER SCIENCE: (1) KAKARAPARTI BHAVANARAYANA PG COLLEGE, VIJAYAWADA; (2) PRABHAS DEGREE COLLEGE, VIJAYAWADA; (3) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE (PG), VIJAYAWADA; (4) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET; (5) VIDYANJALI DEGREE & PG COLLEGE, KAIKALUR (6) SRR & CVR GOVT. DEGREE COLLEGE VIJAYAWDA, (7) MONTESSORI MAHILA KALASALA, VIJAYAWADA. 8) Sai Degree College (PG Courses), Tiruvuru. (9) ANR College, Gudivada.

M.Sc., MATHEMATICS: (1) SDM SIDDHARTHA MAHILA KALASALA, VIJAYAWADA; (2) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (3) MONTESSORI MAHILA KALASALA, VIJAYAWADA; (4) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE, (PG), VIJAYAWADA; (5) MARIS STELLA COLLEGE, VIJAYAWADA; (6) V.S.R.GOVT DEGREE COLLEGE ,MOVVA (7) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET, (8) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA, (9) ANR COLLEGE, GUDIVADA. (10) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

M.Sc., APPLIED MATHEMATICS : KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

M.Sc., ANALYTICAL CHEMISTRY: (1) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID (2) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET, (3) VIDYANJALI DEGREE & PG COLLEGE, KAIKALUR.

M.Sc., ORGANIC CHEMISTRY: (1) NOBLE COLLEGE, MACHILIPATNAM; (2) CHAITANYA DEGREE COLLEGE, NANDIGAMA; (3) SRI SIDDHARTHA PG COLLEGE OF SCIENCE & COMP., NUZVID; (4) SRI KRISHNAVENI DEGREE KALASALA, PORANKI; (5) KVR (KAKANI VENKATA RATNAM) COLLEGE, NANDIGAMA; (6) PRABHAS DEGREE COLLEGE, VIJAYAWADA; (7) VIGAN DEGREE COLLEGE, VISANNAPET; (8) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET; (9) SRR & CVR GOVT. DEGREE COLLEGGE, VIJAYAWADA. (10) VIDYANJALI DEGREE & PG COLLEGE, KAIKALUR; (11) SRI SRINIVASA DEGREE COLLEGE, VUYYU; (12) PAVITRA DEGREE COLLEGE, MACHILIPATNAM; (13) SAI DEGREE COLLEGE, TIRUUVRU; (14) AG & SGS COLLEGE, VUYUURU; (15) NARAYANA MEMORIAL DEGREE COLLEGE, KANCHIKACHERLA; (16) MRR COLLEGE, NANDIGAMA; (17) RUTVIKS DEGREE COLLEGE, VIJAYAWADA; (18) SVL KRANTHI COLLEGE, AVANIGADDA; (19) MVR DEGREE COLLEGE, NUZVID; (20) DVR DEGREE COLLEGE, NANDIGAMA; (21) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (22) SGS (SMT. GENTELA SANKUNTALAMMA) COLLEGE (DEGREE & PG CENTRE), JAGGAYYAPET; (23) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE (PG), VIJAYAWADA; (24) ANR COLLEGE, GUDIVADA; (25) SREE VIDYA DEGREE COLLEGE, GUDIVADA; (26) KAKARAPARTI BHAVANARAYANA PG COLLEGE, VIJAYAWADA; (27) SRI KRISHNAVENI MAHILA KALASALA , VIJAYAWADA (28) DARMA APPARAO COLLEGE NUZVID, (29.) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID (30) GOVT. DEGREE COLLEGE, TIRUVURU. (31) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM.

M.Sc., PHYSICAL CHEMISTRY : (1) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

M.Sc., PHARMACEUTICAL CHEMISTRY: (1) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., INORGANIC CHEMISTRY: (1) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., STATISTICS : KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID

M.Sc., ELECTRONICS: (1) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (2) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE (PG), VIJAYAWADA.(3) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., ELECTRONICS AND INSTRUMENTATION:(1)KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., ZOOLOGY (1) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET (2) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., MICROBIOLOGY: (1) MONTESSORI MAHILA KALASALA, VIJAYAWADA; (2) PRABHAS DEGREE COLLEGE, VIJAYAWADA;

M.Sc., PHYSICS: (1) SGS (SMT. GENTELA SANKUNTALAMMA) COLLEGE (DEGREE & PG CENTRE), JAGGAYYAPET; (2) SREE VIDYA DEGREE COLLEGE, GUDIVADA; (3) ANDHRA LOYOLA COLLEGE, VIJAYAWADA; (4) P.B. SIDDHARTHA COLLEGE OF ARTS & SCIENCE, (PG), VIJAYAWADA; (5) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET, (6) ANR COLLEGE, GUDIVADA. (7) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID.

M.A. ECONOMICS: (1) GOVT. DEGREE COLLEGE, AVANIGADDA; (2) MARIS STELLA COLLEGE, VIJAYAWADA (3) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA.

M.A. ENGLISH: (1) MARIS STELLA COLLEGE, VIJAYAWADA; (2) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE (PG), VIJAYAWADA (3) VIDYANJALI DEGREE & PG COLLEGE, KAIKALUR, (4) VIKAS DEGREE COLLEGE, (PG COURSES) VISANNAPET, (5) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA. (6) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Com., : (1) ANR COLLEGE, GUDIVADA; (2) GANDHI MAHILA KALASALA, VIJAYAWADA; (3) VSR DEGREE COLLEGE, MOVVA; (4) PRABHAS DEGREE COLLEGE, VIJAYAWADA; (5) PB SIDDHARTHA COLLEGE OF ARTS & SCIENCE, (PG), VIJAYAWADA; (6) MARIS STELLA COLLEGE, VIJAYAWADA; (7) KAKARAPARTI BHAVANARAYANA PG COLLEGE, VIJAYAWADA; (8) SDMSM KALASALA, VIJAYAWADA, (9) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA. (10). SGS (SMT. GENTELA SANKUNTALAMMA) COLLEGE (DEGREE & PG CENTRE), (11) AG & SGS COLLEGE, VUYYURU, (12). GOVT. DEGREE COLLEGE, AVANIGADDA. (13) KRISHNA UNIVERSITY Dr. MRAR PG CENTRE, NUZVID. (14) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Ed.,: (1) VIKAS COLLEGE OF EDUCATION, VISANNAPET, NOVA COLLEGE OF EDUCATION, IBRAHIMPATNAM

M.H.R.M.: (1) PRABHAS DEGREE COLLEGE, VIJAYAWADA

M.A. SOCIAL WORK: (1) PRABHAS DEGREE COLLEGE, VIJAYAWADA, (2) SRR & CVR GOVT. DEGREE COLLEGE, VIJAYAWADA.

M.A. JOURNALISM AND MASS COMMUNICATIONS : (1) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.A. TELUGU : (1) VIKAS DEGREE COLLEGE (PG COURSES), VISANNAPET (2) KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

M.Sc., VISUAL COMMUNICATIONS: ANDHRA LOYOLA COLLEGE, VIJAYAWADA

PG DIPLOMA IN E-BANKING : KBN COLLEGE, VIJAYAWADA

PG DIPLOMA IN KUCHIPUDI DANCE(SUTRADHAR) : KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

DIPLOMA IN KUCHIPUDI DANCE : KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

CERTIFICATE COURSE IN KUCHIPUDI DANCE : KRISHNA UNIVERSITY CAMPUS COLLEGE, MACHILIPATNAM

APPENDIX – V

Test-Wise Syllabus

Test No.01 M.Sc., Biochemistry

Section A

Structure and functions of liver, kidney, Composition of blood, blood coagulation, Digestion and absorption of proximate principles, Biological value of proteins, protein malnutrition disorders, Chemistry and physiological role of vitamins, Role of minerals in living systems, Structure and physiological roles of hormones, Basic features of immune response, Lymphoid system, T and B lymphocytes, Cellular and humoral immunity, Classes and structure of immunoglobulin, RIA, ELISA, Vaccines. Bacteria, Viruses, Organisation of genome in prokaryotes and eukaryotes, DNA replication, Biosynthesis of RNA, Protein synthesis, Genetic code, Inhibitors of DNA replication, transcription and translation, Basic concepts of regulation of gene expression, principles and applications of recombinant DNA technology.

Section B: Principles of Enzymology, Bioenergetics, Biological Oxidations, Metabolism of carbohydrates, lipids, proteins, amino acids and nucleic acids

Section C:Classification, chemistry and physico-chemical properties of amino acids, proteins, nucleic acids, carbohydrates, lipids, porphyrins, PH and Buffers, Biomembranes–composition and organisation, Basic principles of biochemical separation methods–paper, thin layer,ion-exchange,affinity chromatography, gel filtration,Centrifugation,Electrophoresis–paper, polyacrylamide,agarose gels.Basic principles of Colorimetry and spectrophotometry.Radio isotopes and their use in Biochemistry.

TEST NO. 02: M.Sc., Biotechnology

Section-A Physical Sciences and Mathematics --Atomic number and atomic weight. Electronic configurations, Electronic theory of valency. Oxidation states, Oxidation numbers. Common redox and ionic reactions. Nuclear chemistry, composition of nucleus, binding energy and packing fraction, Nuclear reaction. Uses of radioisotopes, Electron displacements, bond formation and fission and reaction intermediates, Nucleophiles and electrophiles. Alkanes, alkenes and alkynes, alkyl halides, alcohols, aldehydes, ketones, acids, esters and amino preparations, properties and reactions, Benzene-aromaticity. Dilute solutions - Osmotic pressure, lowering of vapour pressure, depression of freezing point and elevation of boiling point. Molecular weight determination in solution, association and dissociation of solutes. Chemical kinetics-Molecularity and order of a reaction - first order, second order and rate equation. Electrochemistry, laws of electrolytes, conductivity of an electrolyte, hydrolysis of salts, hydrogen ion concentration, buffer solutions and acid-base indicators. Role of metals in biological systems, sodium, potassium, iron, zinc and cobalt, toxic metals. Arsenic, mercury, lead, inorganic and organic pollutants - their reactivity and effect of some pollutants on human and plant life.Application of mathematics in biology. General introduction to computers.

Section-B Life Sciences: Cell structure and function, Cell organelles, Cell division. Genetics, laws of inheritance, Linkage, Crossing over, Polyploidy, Hybrid vigour and Sex determination. Structure and replication of DNA, genetic recombination, transcription and post transcriptional modifications, Concept of genetic code, RNA and ribosomes - their function and role in protein synthesis. Gene cloning, application of gene cloning in medicine, Gene Mapping, Mutations. Cell and its biochemical organization - Structure, chemistry, properties and metabolism of carbohydrates, proteins, fats and vitamins Concept of basic metabolism, Role of enzymes in Metabolism, Enzyme kinetics, inhibition, and Regulation. Microbiology - Classification and identification of bacteria, viruses and other microorganisms, structure and isolation, culture methods, role of microbes in carbon, nitrogen and sulphur cycles in nature. Immunology - Organism immunity, immunity to infectious diseases and vaccines.

Section C Principles of Biotechnology:

Principles and applications of centrifugation, Paper and Thin layer chromatography, paper electrophoresis, agarose gel electrophoresis and their applications. Principle and applications of UV-Visible spectroscopy. Microscopic techniques–Light and electron microscopy. Fermentation - Introduction, types of fermentation processes (batch, fed-batch, continuous), types of fermenters (Stirred tank & Air-Lift Fermenters), feed culture preparation, inoculum preparation and product yield. Product Recovery Techniques (Biomass separation, filtration, centrifugation, membrane separation), Product purification techniques (Dialysis, reverse osmosis, organic solvent extraction). Production of alcoholic beverages (Beer and wine), antibiotics (Penicillin), organic acids (Citric acid), amino acids (Glutamic acid). Single cell proteins and Probiotics. Media used for plant tissue culture, different components of media, sterilization of

media, Callus culture, Meristem culture, Somatic embryogenesis, Synthetic seeds, transgenic plants and applications. Serum and serum free media used for maintenance of animal cell lines, Sterilization of media, Maintenance of primary cell line and secondary cell lines, transgenic animals and their applications. Definition and scope of environmental biotechnology, Municipal solid waste disposal, Microbiological treatment of municipal sewage and industrial effluents, Waste water treatment system (Aerobic, anaerobic and activated sludge process), Bioremediation, Biodegradation.

Test No. 03 : Botany

Section A: Origin and evolution of Life - an outline. Viruses: Structure, replication and transmission; plant diseases caused by viruses and their control. Bacteria: Structure, nutrition, reproduction and economic importance. An outline of Plant diseases of important crop plants caused by bacteria and their control. Cyanobacteria: General Account of Cell Structure, thallus organisation and their prospecting (uses), Biofertilizers. Algae and Fungi:Algae: General account, thallus organisation, structure, reproduction, classification and economic importance. Structure, reproduction, life history and systematic position of *Oedogonium, Coleochaete, Chara, Ectocarpus* and *Polysiphonia.* Fungi: General characters, classification and economic importance Structure, reproduction and life history of *Albugo, Saccharomyces, Penicillium, Puccinia, Alternaria,*. General account of plant diseases caused by Fungi and their control. Bryophyta and Pteridophyta: Bryophytes: General characters, classification and alternation of generations Structure, reproduction, life history and systematic position of *Marchantia, Anthoceros* and Polytrichum. Evolution of Sporophyte in Bryophytes. Pteridophytes: General characters, classification, alternation of generations and evolution of sporophtyte Structure, reproduction, life history and systematic position of *Rhynia, Lycopodium, Equisetum* and *Marsilea* Evolution of stele, heterospory and seed habit in Pteridophytes. Gymnosperms and Palaeobotany: Gymnosperms: General characters, structure, reproduction and classification Morphology of vegetative and reproductive parts, systemic position, life history of *Pinus* and *Gnetum* Palaeobotany: Introduction, Fossils and fossilization; Geological time scale; Importance of fossils.Bennettitales

Section B: *Meristems:* Types, histological organisation of shoot and root apices and theories. *Tissues* and *Tissue Systems:* Simple and complex. *Leaf:* Ontogeny, diversity of internal structure; stomata and epidermal outgrowths.*Stem* and *root: Vascular cambium* - Formation and function. Anamalous secondary growth-General account. Stem - *Achyranthes, Boerhavia, Bignonia, Dracaena;* Root – *Beta Wood structure:* General account. Study of local timbers – Teak (*Tectona grandis*), Rosewood, (*Albergia latefolia*), Red sanders, (*Pterocarpus santalinus*) Nallamaddi (*Terminalia tomentosa* (T. *alata*)), Yegisa (*Pterocarpus marsupiun*) and Neem (*Azadirachta indica*).

Embryology: Introduction: History and importance of Embryology. Anther structure, Microsporogenesis and development of male gametophyte. Ovule structure and types; Megasporogenesis; types and development of female gametophyte. Pollination - Types; Pollen - pistil interaction. Fertilization. Endosperm - Development and types. Embryo - development and types; Polyembryony and Apomixis - an outline. Palynology: Principles and applications.

Taxonomy: Introduction: Principles of plant systematics, Systematics vs Taxonomy, Types of classification: Artificial, Natural and Phylogenetic. Systems of classification: Salient features and comparative account of Bentham & Hooker and Engler & Prantle. An introduction to Angiosperm Phylogeny Group (APG). Current concepts in Angiosperm Taxonomy: Embryology in relation to taxonomy, Cytotaxonomy, Chemotaxonomy and Numerical Taxonomy. Nomenclature and Taxonomic resources: An introduction to ICBN, Vienna code - a brief account. Herbarium: Concept, techniques and applications. Systematic study and economic importance of plants belong to the following families: Annonaceae, Capparaceae, Rutaceae, Fabaceae (Faboideae/papilionoideae, Caesalpinioideae, Mimosoideae), Cucurbitaceae, Apiaceae, Asteraceae, Asclepiadaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae and Poaceae.

Medicinal Botany: Ethnomedicine: Scope, interdisciplinary nature, distinction of Ethnomedicine from Folklore medicine. Outlines of Ayurveda, Sidda, Unani and Homeopathic systems of traditional medicine. Role of AYUSH, NMPB, CIMAP and CDRI. Plants in primary health care: Common medicinal plants – Tippateega (*Tinospora cordifolia*), tulasi (*Oscimum sanctum*), pippallu (*Piper longum*), Karaka (*Terminalia chebula*), Kalabanda (*Aloe vera*), Turmeric (*Curcuma longa*). Traditional medicine vs Modern medicine: Study of select plant examples used in traditional medicine as resource (active principles, structure, usage and pharmacological action) of modern medicine: Aswagandha (*Withania somnifera*), Sarpagandha (*Rauvolfia serpentina*), Nela usiri *(Phyllanthus amarus),* Amla (*Phyllanthus emblica*) and Brahmi (*Bacopa*

monnieri) Moner. Pharmacognosy: Introduction and scope. Adulteration of plant crude drugs and methods of identification - some examples. Indian Pharmacopoeia. Evaluation of crude drugs.

Section C: Cell Biology: Plant cell envelops: Ultra structure of cell wall, molecular organisation of cell membranes. Nucleus: Ultrastructure, Nucleic acids - Structure and replication of DNA; types and functions of RNA Chromosomes: Morphology, organisation of DNA in a chromosome, Euchromatin and Heterochromatin. Karyotype .Cell division: Cell cycle and its regulation; mitosis, meiosis and their significance.

Genetics: Mendelism: Laws of inheritance. Genetic interactions - Epistasis, complementary,

supplementary and inhibitory genes. Linkage and crossing over: A brief account, construction of genetic maps - 2 point and 3 point test cross data Mutations: Chromosomal aberrations-Structural and numerical changes; Gene mutations, transposable elements Gene Expression: Organisation of gene, transcription, translation, mechanism and regulation of gene expression in prokaryotes (Lac.and Trp Operons) Extra nuclear genome: Mitochondrial and plastid DNA, plasmids.

Ecology: Concept and components of Ecosystem. Energy flow, food chains, food webs, ecological pyramids, biogeochemical cycles - Carbon, Nitrogen, Phosphorus. Plants and environment: Ecological factors - Climatic (light and temperature), edaphic and biotic. Ecological adaptations of plants. Population ecology: Natality, mortality, growth curves, ecotypes, ecads. Community ecology: Frequency, density, cover, life forms, biological spectrum,

ecological succession (Hydrosere, Xerosere). Production ecology: Concepts of productivity, GPP, NPP, CR (Community Respiration) and secondary production, P/R ratio and Ecosystems.Biodiversity and Conservation: Biodiversity: Concepts, Convention on Biodiversity - Earth Summit. Types of biodiversity. Levels, threats and value of Biodiversity. Hot spots of India – Endemism, North Eastern Himalayas, Western Ghats. Agro-biodiversity: Vavilov centres of crop plants. Principles of conservation: IUCN threat-categories, RED data book - threatened & endangered plants of India. Role of organisations in the conservation of Biodiversity - IUCN, UNEP, WWF, NBPGR, NBD.

Test No.04 Chemistry

SECTION–A INORGANIC CHEMISTRY:: 1) Chemical Bonding: Detailed description of L.C.A.O. in M.O theory, Bonding, antibonding and non-bonding orbitals, M.O configurations of simple diatomic molecules. H_2, N_2, O_2, C_2, B_2, F_2, CO, NO and their ions. 2) p-Block elements: Preparations, bonding and stereo chemistry of the following. A) Boron Group: Electron deficiency and acceptor behaviour, Boron hydrides, boranes, carboranes and Borazole, Boron and aluminium halides, aluminium alkyls. B) Carbon Group: Carbonyls, Carbides, silicates, silicones, C) Nitrogen Group: Hydrazine, hydroxylamine and hydrazoic acid, oxides and oxy compounds. D) Oxygen group: Oxygen fluorides, Oxides, Oxyacids and halides of Sulphur, Selenium and Tellurium, peracids of Sulphur. E) Halogen group: Oxides and Oxyacids of chlorine, polyhalides, basic properties of halogens, pseudohalogens, Interhalogen compounds. F) Compounds of noble gases. 3. Principles of analytical chemistry: A) Titrimetry: Acid-base titrations, redox titrations, Precipitation titrations, complexometric titrations(E.D.T.A. titrations), theory of Indicators. B) Qualitative and semi-microanalysis: Reaction involved in the separation and identification of anions and cations. C) Gravimetry: Theory of Precipitation, co precipitation and post precipitation. ORGANIC CHEMISTRY:: 1. Reactivity of organic molecules: Types of organic reagents, and reactions fission of covalent bonds - electrophilic, nucleophilic and free radical reagents - explanation of substitution, addition and elimination reactions with examples - bond polarisation, inductive and mesomeric effects, acidity and basicity of organic molecules. Isomerism of different structural and stereoisomerism with examples. 2. IUPAC Nomenclature of organic compounds: Hydrocarbons and compounds coantaining one functional group. 3. Effect of structure on physical properties: Hydrogen bond's definition and its effect on solubility and physical properties with respect to alcohols and acids. 4. Acidity and Basicity: Dissociation constants K_a, pK_a, K_b, pK_b-5. Acidic and basic natures of carboxylic acids, amines, nitroalkanes, phenols, alcohols and alkynes. 6. Alkanes: Sources and general characteristics of alkanes, preparations, physical properties and chemical reactivity based on structure - free radicals - proof of structure - Introduction to confirmation analysis - ethane and n-butane. 7. Cyclic alkanes: Preparation, Physical and chemical properties conformation of cyclopentane and cyclohexane and its mono substituted derivatives. 8. Alkenes: Reactivity based on structure - preparation and properties of alkenes - Mechanism of electrophilic addition cis-trans isomerism - E,Z configuration - dienes, their reactions, concept of resonance - 1:4 - addition and 1,2-addition, Polymerization Eg., rubber.

PHYSICAL CHEMISTRY:: 1. Atomic Structure :Wave nature of electron - Uncertainty Principle - Schrodinger wave equation (Derivation is not necessary) Dependence of probability functions on distance

from nucleus - shapes of atomic orbitals. 2. Ionic Equilibria: Ostwald's dilution Law - Solubility product and common ion effect - applications in qualitative and quantitative analysis. 3. Gaseous state: Ideal gas equation Heat capacities of gases - Law of equipartition on energy, deviation from gas Laws - VanderWaal's equation - critical phenomena - Isotherms of CO - Determination of critical constants - Relation between critical constants and VanderWaal's constants - Law of corresponding states – applications Joule-Thomson effect: Inversion temperature, Liquifaction of gases. 4. Solutions: Solutions of gases in liquids - Henry's Law Binary liquid mixtures partial miscibility - critical solution temperature - complete miscibility -deviation from Raoult's Law- distillation - Azeotropic mixtures, complete immiscibility - steam distillation - Distribution Law - applications.

SECTION – B : INORGANIC CHEMISTRY:: 1. Bonding in metals: General properties of metals, crystal structure of metals, free electron and valence bond theory - Band theory of metals, semiconductors, and insulators, General Principles of extraction of metals, Metallurgy of Nickel, Uranium and thorium. 2. d-block elements: Electronic configuration and comparative study of elements of first transition series with reference to atomic and ionic radii, ionisation potential, redox potential, Oxidation states, -magnetic properties, complex formation, metallic nature, catalytic activity, colour and special trends in physical and chemical preparation in passing from the first to the second and to the third series.3. f-Block Elements: Electronic configuration-general properties ionic size-oxidation states-magnetic properties - lanthanide contraction - separation of Lanthanides by ion exchange and solvent extraction techniques. 4. Nuclear Chemistry: Artificial transmutation, Nuclear reactions, spallation, nuclear fission and fusion, Radioactive isotopes, tracer chemistry carbon dating, some typical applications in industry, agriculture, medicine and biochemistry, therapeutic uses of isotopes. ORGANIC CHEMISTRY:: 1. Alkynes - Reactivity based on structure - preparation and properties of alkynes - Mechanism of electrophilic addition. 2. Arenes: Coal, Source of aromatic compounds - structure of benzene and concept of aromaticity mechanism of electrophilic aromatic substitution - Orientation in aromatic substitution - alkylbenzenes, naphthalene, anthracene. 3. Halogen compounds: Reactivity based on structure - preparation of allyl, aryl and aralkyl halides - physical and chemical properties - reactivity of alkyl halides - mechanism and stereochemistry of nucleophilic substitution -relative reactivity of alkyls and aryl halides -polyhalogen compounds. Fluoro-compounds - isomerism in halogen derivatives. 4. Hydroxy compounds: Reactivity based on structure - preparation of alcohols, and phenols-physical properties and hydrogen bonding - chemical properties - comparison of reactivity of alcohols phenols, - poly hydroxy compounds, ethyleneglycol and glycerol industrial significance of methanol, ethanol, ethyleneglycol, glycerol, phenol. 5. Ethers: Reactivity based on structure - preparation and properties- functional isomerism- cyclic ethers. 6. Carbonyl compounds: Aldehydes and ketones - Reactions based on structure - preparation and properties - mechanism of nucleophilic addition - aldol, Cannizzaro, Grignard reaction - Benzoin condensation - addition of $NaHSO_3$ and HCN - difference in the reactivity of aliphatic and aromatic aldehydes and ketones. 7. Monocarboxylic acids and their derivatives: Reactivity based on the structure of carboxyl group preparation properties acidic nature of carboxyl group, mechanism of esterification and ester hydrolysis - preparation and properties of acid chlorides, acid anhydrides and esters. 8. Organic synthesis based on carbonions: Sources and generation of carbonions - Claisen condensation - keto-enol tautomerism - synthetic applications ethylacetoacetate and diethyl malonate. 9. Nitrogen compounds: Alkyl nitrites and nitroalkanes - Nitrobenzene - Amines - classification, preparation, basic character, reactivity and separation. Aryl diazonium salts and their synthetic applications - cyanides and isocyanides. PHYSICAL CHEMISTRY:: 1. Solid state: Laws of symmetry - rystal systems- Internal structure of crystals- lattice planes and Unit cells, Bragg's equation and its application in crystal structure. Defects of crystals - Frenkel and Schottky's defects. 2. Phase Rule: Statement and explanation of terms, Construction of phase diagrams. Detailed application of water on Silver-Lead and Salt-water systems. 3. Colloids: Distinguishing features -classification - Mechanical Electrical and optical properties and uses of colloids - stability, coagulation - protection of colloids, Gold number. 4. Emulsions and Gels: Donnan membrane equilibrium - origin of charge on colloids - Zeta potential. 5. Adsorption: Types of adsorption - Factors effecting adsorption Freundlich and Laugmuir's adsorption isotherm. 6. Macromolecules: Number-average and weight average molecular weights, determination of molecular weight by osmotic pressure method.

SECTION – C: Inorganic Chemistry : 1. Coordination Chemistry: Double salts - coordination compounds, Earlier theories of Coordination compounds - Werner's theory and Sidwick's electronic interpretation - EAN rule - Nomenclature, Magnetic criteria of bond type, valence bond theory, Elementary treatment of crystal field theory. Splitting of d-orbitals for Octahedral, tetrahedral and square planar geometry. Structural Isomerism, Stereo isomerism - Geometrical and optical: Detection and formation of complexes - composition by Job's method: Factors effecting Stability constants. Application of complexes in

qualitative and quantitative analysis. 2. Organo metallic compounds: Definition and classification, Synthesis, properties and structures and application of organometallic compounds of Li, Mg, B, Zn and Sn. 3. Alloys: Solid solutions, intermetallic compounds Hume-Rothary rules. Role of metal ions in Biological systems - Importance of the metal ions namely Hg, K, Zn, Fe Functions of Haemoglobin, Chlorophyll and Nitrogenase.

Organic Chemistry: 1. Carbohydrates: Classification - Open chain and cyclic structures of glucose and fructose - Muta Rotation - Inter conversions of monosaccharides - Mention of configuration of (+)-glucose and (-)-Fructose. 2. Stereo Chemistry: Basic characteristics of light - introduction of the following terms (Definition and Examples) Polarised light, polarimeter, specific rotation, assymetry, dysymmetry, configuration, inversions, retention, enantiomers, diasteriomers meso compounds, Epimers - Optic isomerism - Optical activity, Racemisation and Resolution - Relative and absolute configurations D&L and R&S notations. 3. Amino acids: Classification of natural aminoacids, Methods of synthesis, physical and chemical properties - Isoelectric point -Zwitter-ion. Heterocyclic compounds: Furan, Thiophene and Pyrrole - Methods of synthesis - Aromatic Character and Reactivity. 4. Alkaloids and Terpenoids: Classification, Isolation, synthesis and structural elucidation of piperine, conine and citral. 5. Structural elucidation of organic compounds: Characteristics of spectrums: UV and IR spectra of simple organic compounds. Types of electronic transitions-fundamental vibrations (strecting and Bonding) - Identification of functional groups of organic compounds.

PHYSICAL CHEMISTRY: Collegative Properties: Relative lowering of Vapour Pressure - Osmosis and Osmotic pressure - relation between osmotic pressure and relative lowering of vapour pressure. Laws of Osmosis- Osmosis-VantHoff's factor - abnormal molecular weights. Elevation in boiling point and depression in freezing point- experimental determination. 2. Chemical kinetics: Definition of terms - Rate equation for first, Second and third order reactions - Methods of determination of order. Zero order reaction - effect of temperature on rates - activation energy - collision theory of bimolecular reactions. (qualitative treatment) Application of Chemical kinetics in understanding the mechanism of a chemical reaction w.r.t S_N^1 and S_N^2) 3. Photochemistry: Grothus-Draper's Law - Einstein's Law of photochemical equivalence - quantum efficiency - abnormal quantum yields - photo chemistry of H_2-Br_2 and H_2-Cl_2 reactions.(qualitative treatments) Fluorescence, Phosphorescence - Photosynthesis and its mechanism. 4. Thermodynamics: Definition of terms - I Law of thermodynamics and its applications - Heat capacities, constant volume and constant pressure. Isothermal and adiabatic changes work of expansion - reversibility and maximum work Kirchoff's equations- II Law - Carnot's cycle - entropy change - elementary concepts of entropy and free energy significance -●s, ●G in reversible and irreversible processes - ●G as a measure of spontaneity of a reaction. Gibb's-HelmHoltz equations. Electrochemistry: Conductance, specific conductance, equivalent conductance, measurement and their dependence of concentration - conductometric titrations and applications of conductivity measurement (Determination of Ka, Kh, Kw and solubility product. Transport number - Determination by Hittorf's method - Kolrausch Law and its applications, behaviour of strong electrolytes - Debye-Huckel theory (Non-mathematical treatment). Electromotive force EMF of cells - Single electrode potentials - NHE and Calomel electrode. Environmental chemistry- Air, Water and Radio Active Pollutions and harmful effects-some organic and inorganic pollutants - Toxicity of Pb, Cd, Hg, and Phosphorous pesticides.

Test No. 05 **Electronics**

Section A : *AC Fundamentals*: The Sine wave –Average and RMS values–The J operator – Polar and rectangular forms of complex numbers – Phasor diagram – Complex impedance and admittance. *Passive networks*: Concept of voltage and current sources – KVL and KCL- Application to simple circuits (AC and DC) consisting of resistors and sources (one or two) - Node voltage analysis and method of mesh currents. *Network theorems (DC and AC)*: Superposition Theorem–Thevenin's Theorem– Norton's Theorem–Maximum power transfer Theorem–Millman Theorem- Reciprocity Theorem – Application to simple networks. *RC and RL Circuits*: Transient response of RL and RC circuits with step input– time constants. Frequency response of RC and RL circuits – Types of Filters: Low pass filter – High pass filter – frequency response - Passive differentiating and integrating circuits. *Resonance*: Series resonance and parallel resonance RLC circuits – Resonant frequency – Q factor – Band width – Selectivity. *PN Junction*: Depletion region – Junction capacitance – Diode equation (no derivation) – Effect of temperature on reverse saturation current – construction, working, V-I characteristics and simple applications of i) Junction diode ii) Zener diode iii) Tunnel diode and iv) Varactor diode. *Bipolar Junction Transistor (BJT):* PNP and NPN transistors–current components in BJT – BJT static characteristics (Input and Output) – Early effect- CB, CC,CE configurations (cut off, active, and saturation regions) CE configuration as two

port network – h-parameters – h-parameter equivalent circuit. Experimental arrangement to study input and output characteristics of BJT in CE configuration. Determination of h-parameters from the characteristics. Biasing and load line analysis – Fixed bias and self bias arrangement. *Field Effect Transistor (FET):* Structure and working of JFET and MOSFET – output and transfer characteristics – Experimental arrangement for studying the characteristics and to determine FET parameters. Application of FET as voltage variable resistor and MOSFET as a switch – Advantages of FET over transistor. *Uni Junction Transistor (UJT)*: Structure and working of UJT- Characteristics. Application of UJT as a relaxation oscillator. *Silicon Controlled Rectifier (SCR):* Structure and working of SCR. Two transistor representation, Characteristics of SCR. Experimental set up to study the SCR characteristics. Application of SCR for power control. *Photo Electric Devices:* Structure and operation of LDR, Photo voltaic cell, Photo diode, Photo transistors and LED.

Section B: *Power Supplies*: Rectifiers– Halfwave, fullwave and bridge rectifiers- Efficiency- Ripple factor- Regulation – Harmonic components in rectified output – Types of filters- Choke input (inductor) filter- Shunt capacitor filter- L section and section filters – Block diagram of regulated power supply - Series and shunt regulated power supplies – Three terminal regulators (78XX and 79XX) – Principle and working of switch mode power supply (SMPS). *RC Coupled Amplifier*: Analysis and frequency response of single stage RC coupled CE amplifier. *Feedback*: Positive and negative feedback- Effect of feedback on gain, band width, noise, input and output impedances.

Operational Amplifiers: Differential amplifier- Block diagram of Op-Amp- Ideal characteristics of Op-Amp- Op-Amp parameters- Input resistance- Output resistance- Common mode rejection ratio (CMMR)- Slew rate- Offset voltages – Input bias current- Basic Op-Amp circuits- Inverting Op-Amp- Virtual ground- Non-inverting Op-Amp- Frequency response of Op-Amp. Interpretation of Op-Amp data sheets. *Applications of Op-Amps*: Summing amplifier- subtractor- Voltage follower- Integrator-Differentiator - Comparator- Logarithmic amplifier- Sine wave [Wein Bridge] and square wave [Astable] generators- Triangular wave generator- Monostable multivibrator- Solving simple second order differential equation. Basic Op-Amp series regulator and shunt regulator. *Communications*: Need for modulation-Types of modulation- Amplitude, Frequency and Phase modulation. Amplitude modulation-side bands- modulation index- square law diode modulator- Demodulation- diode detector. Frequency modulation working of simple frequency modulator- Ratio detection of FM waves- Advantages of frequency modulation. AM and FM radio receivers [block diagram approach]

Section C: Introduction to number systems, Logic gates OR, AND, NOT, X-OR, NAND, NOR gates - Truth tables – Positive and negative logic – Logic families and their characteristics – RTL, DTL, ECL, TTL and CMOS.– Universal building blocks NAND and NOR gates. Laws of Boolean algebra De Morgan's Theorems – Boolean identities – Simplification of Boolean expressions– Karnaugh Maps – Sum of products (SOP) and Product of sums (POS). *Combinational and Sequential circuits*: Multiplexer and De-Multiplexer – Decoder, Half adder, Full adder and Parallel adder circuits. Flip flops – RS, D, JK and JK Master-Slave (working and truth tables) - Semiconductor memories – Organization and working- Synchronous and asynchronous binary counters, Up/Down counters- Decade counter (7490) - working, truth tables and timing diagrams. *Introduction to Microcomputer and Microprocessor*: Intel 8085 Microprocessor – central processing unit CPU – arithmetic and logic unit ALU – timing and control unit – register organization – address, data and control buses- pin configuration of 8085 and its description. Timing diagrams- Instruction cycle, machine cycle, fetch and execute cycles. Instruction set of 8085, instruction and data formats- classification of instructions –addressing modes. Assembly language programming examples of 8 and 16 bit addition, subtraction, multiplication and division. Finding the largest and smallest in a data array. Programming examples using stacks and subroutines. *Interfacing peripherals and applications*: Programmable peripheral interface (8255) - D/A and A/D converters and their interfacing to the Microprocessor. Stepper motor control- seven segment LED.

Test No.06 **Mathematics**

SECTION-A Differential equations of first order and first degree: Linear differential equations; Differential equations reducible to linear form; Exact differential equations; Integrating factors; Change of variables; Simultaneous differential equations; Orthogonal trajectories. Differential equations of the first order but not of the first degree: Equations solvable for *p*; Equations solvable for *y*; Equations solvable for *x*; Equations that do not contain x (or y); Equations of the first degree in *x* and *y* - Clairaut's equation. Higher order linear differential equations Solution of homogeneous linear differential equations of order n with constant coefficients. Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators. Method of undetermined coefficients; Method of variation of parameters;

Linear differential equations with non-constant coefficients; The Cauchy-Euler equation System of linear differential equations: Solution of a system of linear equations with constant coefficients; An equivalent triangular system. Degenerate Case: $p_1(D)\ p_4(D)-p_2(D)\ p_3(D) = 0$. Prescribed Text book: Scope and treatment as in Differential Equations and Their Applications by Zafar Ahsan, published by Prentice-Hall of India Pvt. Ltd. New Delhi-Second edition: Sections: - 2.5 to 2.9, 3.1, 3.2, 4.2, 5.2 to 5.7, 7.3, 7.4.

SOLID GEOMETRY: The Plane Equation of plane in terms of its intercepts on the axis, Equations of the plane through the given points, Length of the perpendicular from a given point to a given plane, Bisectors of angles between two planes, Combined equation of two planes, Orthogonal projection on a plane. The Line: Equations of a line, Angle between a line and a plane, The condition that a given line may lie in a given plane, The condition that two given lines are coplanar, Number of arbitrary constants in the equations of a straight line. Sets of conditions which determine a line, The shortest distance between two lines. The length and equations of the line of shortest distance between two straight lines, Length of the perpendicular from a given point to a given line, Intersection of three planes, Triangular Prism. The Sphere: Definition and equation of the sphere, Equation of the sphere through four given points, Plane sections of a sphere. Intersection of two spheres; Equation of a circle. Sphere through a given circle; Intersection of a sphere and a line. Power of a point; Tangent plane. Plane of contact. Polar plane, Pole of a plane, Conjugate points, Conjugate planes; Angle of intersection of two spheres. Conditions for two spheres to be orthogonal; Radical plane. Coaxial system of spheres; Simplified from of the equation of two spheres. Cones, Cylinders and conicoids: Definitions of a cone, vertex, guiding curve, generators. Equation of the cone with a given vertex and guiding curve. Enveloping cone of a sphere. Equations of cones with vertex at origin are homogenous. Condition that the general equation of the second degree should represent a cone. Condition that a cone may have three mutually perpendicular generators Intersection of a line and a quadric cone. Tangent lines and tangent plane at a point. Condition that a plane may touch a cone. Reciprocal cones. Intersection of two cones with a common vertex. Right circular cone. Equation of the right circular cone with a given vertex, axis and semi-vertical angle.Definition of a cylinder. Equation to the cylinder whose generators intersect a given conic and are parallel to a given line, Enveloping cylinder of a sphere. The right circular cylinder. Equation of the right circular cylinder with a given axis and radius. The general equation of the second degree and the various surfaces represented by it; Shapes of some surfaces. Nature of Ellipsoid. Nature of Hyperboloid of one sheet.

SECTION –B GROUPS : Binary operations- Definitions and properties, Groups--Definition and elementary properties, Finite groups and group composition tables, Subgroups and cyclic subgroups. Permutations--Functions and permutations ,groups of permutations, cycles and cyclic notation, even and odd permutations, The alternating groups. Cyclic groups - Elementary properties ,The classification of cyclic groups , sub groups of finite cyclic groups. Isomorphism - Definition and elementary properties, Cayley's theorem, Groups of cosets, Applications, Normal subgroups - Factor groups , Criteria for the existence of a coset group, Inner automorphisms and normal subgroups, factor groups and simple groups, Homomorphism- Definition and elementary properties, The fundamental theorem of homomorphisms, applications.

RINGS: Definition and basic properties, Fields, Integral domains, divisors of zero and Cancellation laws, Integral domains, The characteristic of a ring, some non – commutative rings, Examples, Matrices over a field, The real quaternions ,Homomorphism of Rings - Definition and elementary properties, Maximal and Prime ideals, Prime fields.

REAL NUMBERS: The Completeness Properties of R, Applications of the Supremum Property. Sequences and Series-Sequences and their limits, limit theorems, Monotonic Sequences, Sub-sequences and the Bolzano-Weirstrass theorem,The Cauchy's Criterion ,Properly divergent sequences, Introduction to series, Absolute convergence, test for absolute convergence, test for non-absolute convergence. Continuous Functions--continuous functions, combinations of continuous functions, continuous functions on intervals, Uniform continuity.

DIFFERENTIATION AND INTEGRATION: The derivative, The mean value theorems, L'Hospital Rule, Taylor's Theorem. Riemann integration-Riemann integral, Riemann integrable functions, Fundamental theorem.

SECTION-C LINEAR ALGEBRA AND VECTOR CALCULUS: Linear Algebra Vector spaces, General properties of vector spaces, Vector subspaces, Algebra of subspaces, linear combination of vectors. Linear span, linear sum of two subspaces, Linear independence and dependence of vectors, Basis of vector space, Finite dimensional vector spaces, Dimension of a vector space, Dimension of a subspace. Linear transformations, linear operators, Range and null space of linear transformation, Rank and nullity of linear transformations, Linear transformations as vectors, Product of linear transformations, Invertible

linear transformation. The adjoint or transpose of a linear transformation, Sylvester's law of nullity, characteristic values and characteristic vectors , Cayley- Hamilton theorem, Diagonalizable operators. Inner product spaces, Euclidean and unitary spaces, Norm or length of a vector, Schwartz inequality, Orthogonality, Orthonormal set, complete orthonormal set, Gram - Schmidt orthogonalisation process. Multiple integrals and Vector Calculus Multiple integrals : Introduction, the concept of a plane, Curve, line integral- Sufficient condition for the existence of the integral. The area of a subset of R^2, Calculation of double integrals, Jordan curve , Area, Change of the order of integration, Double integral as a limit, Change of variable in a double integration. Vector differentiation. Ordinary derivatives of vectors, Space curves, Continuity, Differentiability, Gradient, Divergence, Curl operators, Formulae involving these operators. Vector integration, Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems.

Test No.07 Microbiology

Section-A 1. History of Microbiology: Contributions of Leeuwenhoek, Pasteur, Robert Koch, Iwanowski; 2. Typical structure of prokaryotic and eukaryotic cells; 3. Bacteria: Morphology, structure, Gram-staining, Acid-fast staining; 4. Cyanobacteria: General characters, importance; 5. General features of Actinomycetes and Mycoplasmas; 6. Viruses: Structure of TMV and T4 phages, lytic and lysogenic cycles, transmission of viruses; 7. Fungi: General characters, reproduction, classification, importance; 8. Edible fungi: SCP, mushroom cultivation; 9. Microalgae: General characters, reproduction, importance ; 10. Protozoa: General characters, importance

Section- B 1. Culturing of bacteria: sterilization techniques, synthetic and complex media, pure cultures, preservation of microbial cultures; 2. Growth phases of Bacteria and factors affecting growth; 3. Photoautotrophs, Photoheterotrophs, Chemolithotrophs and Chemoheterotrophs; 4. Respiration; Aerobic (Glycolysis, Kreb's cycle, Electron transport system) and anaerobic systems; 5. Fermentations: Alcohol and lactic acid fermentations; 6. Structure of DNA: Watson and Crick model; 7. Types of RNA and their functions; 8. Gene concept, genetic code and protein synthesis; 9. Types of gene transfer in Bacteria: Transformation, Transduction and Conjugation; 10. Mutations: Spontaneous and induced mutations, significance

Section-C 1. Food spoilage: Spoilage of fruits, vegetables, cereals, eggs, meat and fish; 2. Preservation of foods: Low temperatures, high temperatures, drying, chemical preservatives, radiation; 3. Dairy Microbiology: Microorganisms in milk, quality testing of milk, pasteurization, production of curd and cheese; 4. Fermentation equipment and screening of microbes for commercially valuable products; 5. Fermentation types: Batch, fed-batch and continuous types, dual or multiple fermentations; 6. Fermentative production of Antibiotics: Penicillin and Streptomycin; 7. Fermentative production of Citric acid and Acetic acid; 8. Production of beer and wine; 9. Microorganisms in soil and water; 10. Role of microorganisms in the decomposition of organic matter (carbon cycle); 11. Nitrogen transformations by Microorganisms: Ammonification, nitrification, denitrification; 12. Nitrogen fixation: Symbiotic and non-symbiotic processes; 13. General account of diseases caused by bacteria (Cholera, Typhoid), viruses (Polio, AIDS) and protozoa (Amoebic dysentery, Malaria) ; 14. Prophylactic measures for the control of infectious diseases: Quarantine, sanitation, prevention of disease transmission, Immunization; 15. Chemotherapy: Antibiotics and synthetic drugs.

Test No.08 Physics

Section A Vector Analysis : Scalar and vector fields, gradient of a scalar field and its physical significance. Divergence and curl of a vector field and related problems. Vector integration, line, surface and volume integrals. Stokes, Gauss and Greens theorems- simple applications. Mechanics of Particles: Laws of motion, motion of variable mass system, motion of a rocket, multi-stage rocket, conservation of energy and momentum. Collisions in two and three dimensions, concept of impact parameter, scattering cross-section, Rutherford scattering Mechanics of rigid bodies: Definition of Rigid body, rotational kinematic relations, equation of motion for a rotating body, angular momentum and inertial tensor. Eulers equation, precession of a top, Gyroscope, precession of the equinoxes Mechanics of continuous media: Elastic constants of isotropic solids and their relation, Poisson's ratio and expression for Poisson's ratio in terms of y, n, k. Classification of beams, types of bending, point load, distributed load, shearing force and bending moment, sign conventions, simple supported beam carrying a concentrated load at mid span, cantilever with an end load Central forces: Central forces – definition and examples, conservative nature

of central forces, conservative force as a negative gradient of potential energy, equation of motion under a central force, gravitational potential and gravitational field, motion under inverse square law, derivation of Kepler's laws, Coriolis force and its expressions. Special theory of relativity: Galilean relativity, absolute frames, Michelson-Morley experiment, Postulates of special theory of relativity. Lorentz transformation, time dilation, length contraction, addition of velocities, mass-energy relation. Concept of four vector formalism. Fundamentals of vibrations: Simple harmonic oscillator, and solution of the differential equation– Physical characteristics of SHM, torsion pendulum, - measurements of rigidity modulus , compound pendulum, measurement of 'g', combination of two mutually perpendicular simple harmonic vibrations of same frequency and different frequencies, Lissajous figures Damped and forced oscillations: Damped harmonic oscillator, solution of the differential equation of damped oscillator. Energy considerations, comparison with undamped harmonic oscillator, logarithmic decrement, relaxation time, quality factor, differential equation of forced oscillator and its solution, amplitude resonance, velocity resonance Complex vibrations: Fourier theorem and evaluation of the Fourier coefficients, analysis of periodic wave functions-square wave, triangular wave, saw-tooth wave Vibrations of bars: Longitudinal vibrations in bars- wave equation and its general solution. Special cases (i) bar fixed at both ends ii) bar fixed at the mid point iii) bar free at both ends iv) bar fixed at one end. Transverse vibrations in a bar-wave equation and its general solution. Boundary conditions, clamped free bar, free-free bar, bar supported at both ends, Tuning fork. Vibrating Strings: Transverse wave propagation along a stretched string, general solution of wave equation and its significance, modes of vibration of stretched string clamped at both ends, overtones, energy transport, transverse impedance. Ultrasonics: Ultrasonics, properties of ultrasonic waves, production of ultrasonics by piezoelectric and magnetostriction methods, detection of ultrasonics, determination of wavelength of ultrasonic waves. Velocity of ultrasonics in liquids by Sear's method. Applications of ultrasonic waves.

SECTION-B Kinetic theory of gases: Introduction – Deduction of Maxwell's law of distribution of molecular speeds, Experimental verification Toothed Wheel Experiment, Transport Phenomena – Viscosity of gases – thermal conductivity – diffusion of gases. Thermodynamics: Introduction – Reversible and irreversible processes – Carnot's engine and its efficiency – Carnot's theorem – Second law of thermodynamics, Kelvin's and Claussius statements – Thermodynamic scale of temperature – Entropy, physical significance – Change in entropy in reversible and irreversible processes – Entropy and disorder – Entropy of universe – Temperature- Entropy (T-S) diagram – Change of entropy of a perfect gas-change of entropy when ice changes into steam. Thermodynamic potentials and Maxwell's equations: Thermodynamic potentials – Derivation of Maxwell's thermodynamic relations – Clausius-Clayperon's equation – Derivation for ratio of specific heats – Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect – expression for Joule Kelvin coefficient for perfect and Vanderwaal's gas. Low temperature Physics: Introduction – Joule Kelvin effect – liquefaction of gas using porous plug experiment. Joule expansion – Distinction between adiabatic and Joule Thomson expansion – Expression for Joule Thomson cooling – Liquefaction of helium, Kapitza's method – Adiabatic demagnetization – Production of low temperatures – Principle of refrigeration, vapour compression type. Working of refrigerator and Air conditioning machines. Effects of Chloro and Fluro Carbons on Ozone layer; applications of substances at low- temperature. Quantum theory of radiation: Black body-Ferry's black body – distribution of energy in the spectrum of Black body – Wein's displacement law, Wein's law, Rayleigh-Jean's law – Quantum theory of radiation - Planck's law – deduction of Wein's law, Rayleigh-Jeans law, from Planck's law - Measurement of radiation – Types of pyrometers – Disappearing filament optical pyrometer – experimental determination – Angstrom pyroheliometer - determination of solar constant, effective temperature of sun. Statistical Mechanics: Introduction to statistical mechanics, concept of ensembles, Phase space, Maxwell-Boltzmann's distribution law, Molecular energies in an ideal gas, Bose-Einstein Distribution law, Fermi-Dirac Distribution law, comparison of three distribution laws, Black Body Radiation, Rayleigh-Jean's formula, Planck's radiation law, Weins Displacement, Stefan's Boltzmann's law from Plancks formula. Application of Fermi-Dirac statistics to white dwarfs and Neutron stars. The Matrix methods in paraxial optics: Introduction, the matrix method, effect of translation, effect of refraction, imaging by a spherical refracting surface. Imaging by a co-axial optical system. Unit planes. Nodal planes. A system of two thin lenses. Aberrations: Introduction – Monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration – the achromatic doublet – Removal of chromatic aberration of a separated doublet. Interference: Principle of superposition – coherence – temporal coherence and spatial coherence – conditions for Interference of light Interference by division of wave front: Fresnel's biprism – determination of wave length of light. Determination of thickness of a transparent material using Biprism –

change of phase on reflection – Lloyd's mirror experiment. Interference by division of amplitude: Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (Cosine law) – Colours of thin films – Non reflecting films – interference by a plane parallel film illuminated by a point source – Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film) – Determination of diameter of wire-Newton's rings in reflected light with and without contact between lens and glass plate, Newton's rings in transmitted light (Haidinger Fringes) – Determination of wave length of monochromatic light – Michelson Interferometer – types of fringes – Determination of wavelength of monochromatic light, Difference in wavelength of sodium D_1,D_2 lines and thickness of a thin transparent plate. Diffraction: Introduction – Distinction between Fresnel and Fraunhoffer diffraction Fraunhoffer diffraction:- Diffraction due to single slit and circular aperture – Limit of resolution – Fraunhoffer diffraction due to double slit – Fraunhoffer diffraction pattern with N slits (diffraction grating) Resolving Power of grating – Determination of wave length of light in normal and oblique incidence methods using diffraction grating. Fresnel diffraction:- Fresnel's half period zones – area of the half period zones –zone plate – Comparison of zone plate with convex lens – Phase reversal zone plate – diffraction at a straight edge – difference between interference and diffraction. Polarization: Polarized light : Methods of Polarization, Polarizatioin by reflection, refraction, Double refraction, selective absorption , scattering of light – Brewsters law – Malus law – Nicol prism polarizer and analyzer – Refraction of plane wave incident on negative and positive crystals (Huygen's explanation) – Quarter wave plate, Half wave plate – Babinet's compensator – Optical activity, analysis of light by Laurent's half shade polarimeter.Laser, Fiber Optics and Holography: Lasers: Introduction – Spontaneous emission – Stimulated emission – Population inversion . Laser principle – Einstein coefficients – Types of Lasers – He-Ne laser – Ruby laser – Applications of lasers. Fiber Optics : Introduction – Optical fibers – Types of optical fibers – Step and graded index fibers – Rays and modes in an optical fiber – Fiber material – Principles of fiber communication (qualitative treatment only) and advantages of fiber communication. Holography: Basic Principle of Holography – Gabor hologram and its limitations, Holography applications.

SECTION-C Electrostatics: Gauss law and its applications-Uniformly charged sphere, charged cylindrical conductor and an infinite conducting sheet of charge. Deduction of Coulmb's law from Gauss law Mechanical force on a charged conductor Electric potential – Potential due to a charged spherical conductor, , electric field strength from the electric dipole and an infinite line of charge. Potential of a uniformly charged circular disc. Dielectrics: An atomic view of dielectrics, potential energy of a dipole in an electric field. Polarization and charge density, Gauss's law for dielectric medium– Relation between D,E, and P. Dielectric constant, susceptibility and relation between them. Boundary conditions at the dielectric surface. Electric fields in cavities of a dielectric-needle shaped cavity and disc shaped cavity. Capacitance of concentric spheres and cylindrical condenser, capacitance of parallel plate condenser with and without dielectric. Electric energy stored in a charged condenser – force between plates of condenser, construction and working of attracted disc electrometer, measurement of dielectric constant and potential difference. Magnetostatics: Magnetic shell – potential due to magnetic shell – field due to magnetic shell – equivalent of electric circuit and magnetic shell – Magnetic induction (B) and field (H) – permeability and susceptibility – Hysteresis loop.Moving charge in electric and magnetic field: Hall effect, cyclotron, synchrocyclotron and synchrotron – force on a current carrying conductor placed in a magnetic field, force and torque on a current loop, Biot –Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid.Electromagnetic induction: Faraday's law –Lenz's law – expression for induced emf – time varying magnetic fields – Betatron –Ballistic galvanometer – theory – damping correction – self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid – toroid – energy stored in magnetic field – transformer – Construction, working, energy losses and efficiency. Varying and alternating currents: Growth and decay of currents in LR, CR and LCR circuits – Critical damping. Alternating current relation between current and voltage in pure R,C and L-vector diagrams – Power in ac circuits. LCR series and parallel resonant circuit – Q-factor. AC & DC motors-single phase, three phase (basics only). Maxwell's equations and electromagnetic waves A review of basic laws of electricity and magnetism – displacement current – Maxwell's equations in differential form – Maxwell's wave equation, plane electromagnetic waves – Transverse nature of electromagnetic waves, Poynting theorem, production of electromagnetic waves (Hertz experiment).Basic Electronics Formation of electron energy bands in solids, classification of solids in terms of forbidden energy gap. Intrinsic and extrinsic semiconductors, Fermi level, continuity equation – p-n junction diode, Zener diode characteristics and its application as voltage regulator. Half wave and full wave rectifiers and filters, ripple factor (quantitative) – p n p and n p n transistors, current components in transistors, CB,CE and CC configurations – transistor hybrid parameters – determination of hybrid parameters from transistor

characteristics – transistor as an amplifier — concept of negative feed back and positive feed back – Barkhausen criterion, RC coupled amplifier and phase shift oscillator (qualitative). Digital Principles: Binary number system, converting Binary to Decimal and vice versa. Binary addition and subtraction (1's and 2's complement methods). Hexadecimal number system. Conversion from Binary to Hexadecimal – vice versa and Decimal to Hexadecimal vice versa. Logic gates: OR,AND,NOT gates, truth tables, realization of these gates using discrete components. NAND, NOR as universal gates, Exclusive – OR gate, De Morgan's Laws – statement and proof, Half and Full adders. Parallel adder circuits.

Test No.09 Zoology

Section A: Protozoa to Annelida: Phylum Protozoa: General characters and outline classification up to classes.Type study: *Paramecium.*Phylum Porifera : General characters and outline classification up to classes. Type study: *Sycon*; Canal system in Sponges Phylum Coelenterata: General characters and outline classification up to classes. Type study: *Obelia*; Polymorphism in Coelenterates; Corals and Coral reef formation. Phylum Platyhelminthes: General characters and outline classification up to classes. Type study: *Fasciola hepatica*. Phylum Nemathelminthes: General characters and outline classification up to classes. Type study: *Ascaris lumbricoides*. Phylum Annelida: General characters and outline classification up to classes Type study: Leech; Coelom and coelomoducts in Annelids. Arthropoda to Hemichordata: Phylum Arthropoda: General characters and outline classification of up to classes Type study: Prawn; Penouy monedon (Type Study) Crustacean larvae; *Peripatus*- Characters and Significance. Phylum Mollusca: General characters and outline classification of up to classes Type study: *Pila*; Pearl formation in Molluscs Phylum Echinodermata: General characters and outline classification of up to classes. Type study: Star fish. General characters of Hemichordata : Structure and affinities of *Balanoglossus.* Cell Biology:Cell theory Ultra structure of Animal cell Structure of Plasma membrane - Fluid-mosaic model. Transport functions of Plasma membrane- Passive transport, active transport (Antiport, symport and uniport) and bulk transport. Structure and functions of Endoplasmic reticulum Golgi body, Ribosomes, lysosomes and Mitochondrion. Chromosomes - nomenclature types and structure. Giant chromosomes – Polytene and Lampbrush chromosomes. Cell division - Cell-cycle stages (G_1, S, G_2, and M phases), Cell-cycle check points and regulation. Mitosis; Meiosis - and its significance. Biomolecules of the cell Carbohydrates: Classification of Carbohydrates Structure of Monosaccharides (Glucose and Fructose) Structure of Disaccharides (Lactose and Sucrose) Structure of Polysaccharides (Starch, Glycogen and Chitin) Proteins: Amino acids: General properties, nomenclature, classification and structure. Classification of proteins based on functions, chemical nature and nutrition, peptide bond and structure (Primary, secondary, tertiary and quaternary structures) Lipids: Classification. Structure of Fatty acids (Saturated and unsaturated).Triacylglycerols, Phospolipids (Lecithin and cephalin) and Steroids (Cholesterol). Nucleic acids: Structure of purines, pyrimidines, ribose and deoxyribose sugars. Watson and Crick model of DNA- Nucleoside, Nucleotide, Chargaff's rule. Structure of RNA, Types of RNA - rRNA, tRNA and mRNA.

SECTION-B Protochordata to Amphibia: Protochordates: Salient features of Urochordata and Cephalochordata Structure and life-history of *Herdmania*, Significance of retrogressive Metamorphosis. General organization of Chordates General characters of Cyclostomes, General characters of fishes, classification up to sub-class level with examples Type study - *Scoliodon* : Morphology, respiratory system, circulatory system, excretory system, nervous system and sense organs. Migration in fishes and types of scales General characters and classification of Amphibia up to order level. Type study - *Rana* : Morphology, respiratory system, circulatory system and reproductive system Parental care in amphibians

Reptilia to Mammalia: General characters and classification of Reptilia up to order level.Type study – *Calotes* : Morphology, digestive system, respiratory system, circulatory system, urinogenital system and nervous system. General characters and classification of Aves up to order level with examples. Type study - Pigeon (*Columbia livia*): Exoskeleton, respiratory system, circulatory system and excretory system. Significance of migration in birds Flight adaptation in birds General characters and classification of Mammalia up to order levelwith examples. Dentition in Mammals.Embryology: Spermatogenesis, Oogenesis and Fertilization. Types of eggs Types of cleavages. Development of frog up to gastrulation and formation of primary germ layers. Foetal membranes and their significance. Placenta : types and functions. Regeneration with reference to Turbellarians and Lizards. Ecology: Biogeochemical cycles or nutrient cycles - Gaseous cycles of Nitrogen and Carbon; Sedimentary cycle- phosphorus. Definition of Community- Habitat and ecological niche Community interactions : Brief account on Competition, predation, mutualism,commensalism and parasitism. Ecological succession: Primary and secondary, seral

stages, climax community with examples Population ecology: Density and dispersions of animal populations. Growth curves and growth of animal populations- r-selected and k-selected species Population regulation mechanisms – both biotic and abiotic Growth of human population and its control Future of human population Zoogeography (Addition) 1.Fauna of Oriental Realm 2. Fauna of Australian Realm.

SECTION-C Physiology of Digestion: Definition of digestion and types of digestion – extra and intracellular. Digestion of Carbohydrates, proteins, lipids and cellulose digestion. Absorption and assimilation of digested food materials. Gastrointestinal hormones- control of digestion. Physiology of respiration Types of respiration – external and internal respiration. Structure of mammalian lungs and gaseous exchange. Transport of oxygen – formation of oxyhaemoglobin and affinity of haemoglobin for Oxygen, Oxygen dissociation curves. Transport of CO_2 – Chloride shift, Bohr effect. Cellular respiration – Main steps of glycolysis, Kreb's cycle, electron transport, Oxidative phosporylation and ATP production (Chemosmotic theory). Physiology of Circulation: Open and closed circulation.Structure of mammalian heart and its working mechanism- Heartbeat and cardiac cycle. Myogenic and neurogenic hearts. Regulation of heart rate – Tachycardia and Bradycardia. Physiology of Excretion: Definition of excretion. Forms of nitrogenous waste material and their formation; classification of animals on the basis of excretory products. Gross organization of mammalian excretory system and structure of kidney. Structure and function of Nephron – Counter current mechanism. Physiology of muscle contraction: General structure and types of muscles. Ultra structure of skeletal muscle. Sliding filament mechanism of muscle contraction. Chemical changes during muscle contraction – role of calcium, ATP utilization and its replenishment. Physiology of nerve impulse: Structure of nerve cell. Nature of nerve impulse – resting potential and action potential. Properties of nerve impulse – threshold value, refractory period, all or none response. Conduction of nerve impulse along an axon – local circuit theory and saltatory conduction theory. Structure of synapse, mechanism of synaptic transmission – electrical and chemical transmissions. Physiology of Endocrine system: Relationship between hypothalamus and pituitary gland. Hormones of hypothalamus. Hormones of Adenohypophysis and Neurohypophysis. Hormones of pineal gland, thyroid gland, parathyroid, thymus, adrenal and pancreas. Endocrine control of mammalian reproduction – Male and female hormones – Hormonal control of menstrual cycle in humans. Physiology of Homeostasis: Concept of Homeostasis and its basic working mechanism. Mechanism of Homeostasis – giving three illustrations viz., Hormonal control of glucose levels, Water and ionic regulation by freshwater and marine animals and temperature regulation in man.Genetics: Mendel's laws – Law of segregation and independent assortment; Genetic. Interactions – Incomplete dominance, codominance and epistasis. Identification of DNA as the genetic material –Griffith's experiment and Hershey – Chase experiment. Central dogma of molecular biology – Brief account of DNA replication (Semi-conservative method), Replication fork (Continous and discontinous synthesis); Transcription– Brief account of initiation, elongation and termination in eukaryotes; Translation; Genetic code; gene regulation as exemplified by lac operon. Human karyotyping, barr bodies and Lyon hypothesis and Amniocentesis chromosomal disorders – Autosomal and sex chromosomes. Organic Evolution : Genetic basis of Evolution, Gene pool and gene frequencies, Hardy-Weinberg's Law, Force of destabilization, natural selection, genetic drift, Mutation, Isolation and Migration.Speciation – Allopatry and sympatry.

Test No.10 **Computer Science**

SECTION –A : PC Software and 'C' Programming: Fundamentals of Computers**:**Computer definition – Types of Computer – Logical Organization of a Digital Computer – Memory: Main Memory : RAM, ROM and Cache – Secondary Memory : Magnetic type, Floppy disk, Hard disk, Compact disk – Input devices – Output devices – Operating system : Definition, functions of an operating system, Types of Operating systems : Brief details of batch processing, Multi Programming, multi tasking, time sharing, real time operating systems - Introduction to DOS, DOS internal commands, DOS External Commands – Introduction to Windows, Desktop, File, Folder, My Computer, My documents, Recycle bin, Internet Explorer, Windows Explorer – Types of Programming Languages. Word and MS Power Point**:**Word Basics : Starting word, Creating a new document, Opening preexisting document, The parts of a word window, Typing text, Selecting text, Deleting text, Undo, Redo, Repeat, Inserting text, Replacing text, Formatting text, Cut, Copy, Paste – Printing. Formatting Your Text and Documents : Auto format, Line spacing, Margins, Borders and Shading. Working with Headers and Footers: Definition of headers and footers, creating basic headers and footers, creating different headers and footers for odd and even pages. Tables : Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, Deleting

columns, changing column width. Graphics : Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing. Templates : Template types, using templates, exploring templates, modifying templates. Macros : Macro, Recording macros, editing macros, running a macro. Mail Merge : Mail Merge concept, Main document, data sources, merging data source and main document. Overview of word menu options word basic tool bar. Power Point : Basics, Terminology, Getting started, Views Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements MS Excel and MS Access**:** *MS Access* Creating a Simple Database and Tables: Creating a contacts Databases with the wiz, The Access Table Wizard, Creating Database Tables without the wizard, Field Names, Data Types and Properties, Adding, deleting fields, renaming the fields in a table. Forms: The Form Wizard, Saving Forms, Modifying Forms Entering and Editing Data: Adding Records, Duplicating previous entries without Retyping, Undo, Correcting Entries, Global Replacements, Moving from Record to Record in a table. Finding, Sorting and Displaying Data: Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multilevel Sorts, Finding incomplete matches, Showing All Records after a Query, Saving Queries, Crosstab Queries. Printing Reports : Simple table, Form and Database printing, Defining advanced Reports, Manual Reporting, properties in Reports, Saving Reports. Relational Databases: Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.*MS Excel :* Excel Basics: Overview of Excel features, Getting started, Creating a new worksheet, Selecting cells, Entering and editing text, Entering and editing Numbers, entering and editing Formulas, Referencing cells, moving cells, copying cells, sorting cell data, inserting rows, inserting columns, Inserting cells, Deleting parts of a worksheet, clearing parts of a worksheet. Formatting : Page setup, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns. Introduction to functions: Parts of a functions, Functions Requiring Add-ins, The Function Wizard. Examples functions by category: Data and time functions, Engineering functions, Math and Trig functions, Statistical functions, Text functions. Excel Charts: Chart parts and terminology, Instant charts with the chard wizard, creation of different types of charts, printing charts, deleting charts – Linking in Excel Excel Graphics: Creating and placing graphic objects, Resizing Graphics, Drawing Lines and Shapes. **C Language fundamentals:** Introduction – 'C' Fundamentals : Programming – High Level Languages – compiling programs – Integrated Development Environments – Language Interpreters – Compiling your first program – Running your program – understanding your first program – comments – variables, Data types, and Arithmetic Expressions : working with variables – Understanding Data types and constants – working with Arithmetic Expressions – The Assignment operators – The printf function – The scanf function - Decision making : The if statement – the if else construct – Nested if statements – The else if construct – The switch statement – Boolean variables – The conditional operator – program looping : The for statement – Relational operators – Nested for loops – The while statement – The do statement – The break statement – The continue statement – working with Arrays : Defining an array – Initializing Arrays – character Arrays – The const Qualifier – Multidimensional arrays- variable length Arrays. Working with Functions : Defining a Function- Arguments and Local variables – Returning Function Results – Function calling – Declaring Return Types and Argument types – Top Down programming – Functions and Arrays – global variables – Automatic and static variables – Recursive Functions.Programming in C**:** Working with structures : Defining structure – Functions and structures – Initializing structures – Array of structures- structures containing structures – structures containing Arrays – Structure variants – Character strings : Array of characters – variable length character strings – Escape characters – character strings, structures and arrays - character operations. Pointers : Defining a pointer variable – using pointers in Expressions – pointers and structures (Exclude Linked List) – Pointers and Functions – pointers and Arrays – operations on pointers – pointers and Memory address. Operations on Bits : Bit operators – Bit fields

The pre-processor : The # define statement – The # # operator – The #include statement – conditional compilation. More on Data Types : Enumerated Data Types – The typedef statement – Data Type conversions Input and Output Operations in "C" : Character I/O – formatted I/O – Input and Output Operations with Files – Special functions for working with Files. Miscellaneous and Advanced features: The Goto Statement, the null statement, working with unions- the comma operator-type qualifiers.

SECTION-B: Object Oriented Programming with Java and Data Structures.Fundamentals of Object Oriented programming : Object Oriented paradigm – Basic concepts of Object Oriented Programming –

Benefits of OOP – Applications of OOP. Java Evolution : Java Features – How Java differs from C and C++ - Java and Internet – Java and World Wide Web – Web Browsers – Hardware and Software Requirements – Java Environment. Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens- Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments. Constants, Variables and Data types: Constants – Variables – Data types – Declaration of Variables-Giving Values to variables- Scope of Variables-Symbolic Constants-Type Casting. Oops Concepts in Java: Operators and Expressions: Arithmetic Operators – Relational Operators- Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Operator Precedence and Associativity. Decision Making and Branching: Decision Making with If statement – Simple If Statement-If else Statement-Nesting If Else Statement- the ElseIf Ladder-The switch Statement – The ?: operator. Decision Making and Looping: The while statement – The do statement – The for statement – Jumps in Loops. Class , Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control. Packages and Interfaces in Java Arrays, Strings and Vectors: One-dimensional Arrays-creating an Array – Two dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types. Interfaces: Multiple Inheritance : Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables. Packages: Java API Packages – Using system Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import. Multithreaded programming and Applets: Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization.Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for debugging Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a WebPage – Applet Tag – Adding Applet to HTML file – Running the Applet – More about Applet Tag – Passing parameters to Applets – Aligning the display – More about HTML tags – Displaying Numerical Values – Getting Input from the user. Data StructureS: Sorting: Bubble Sort – Selection Sort – Insertion Sort – Quick Sort-Stacks and Queues: Stacks – Queues – Circular Queue – Deques - Priority Queue – Parsing Arithmetic Expressions – Linked List: Simple Linked List – Finding and Deleting Specified Links – Double Ended Lists – Abstract Data types – Sorted Lists – Doubly Linked Lists – Advanced Sorting : Quick Sort - Binary Trees : Tree Terminology – Finding a Node – Inserting a Node – Traversing the Tree – Finding Maximum and Minimum values – Deleting a Node – Efficiency of Binary Trees – Trees Represented as Arrays – Graphs: Introduction to Graphs – Searches – Minimum Spanning Tree – Topological Sorting with Directed Graphs – Connectivity in Directed Graphs.

SECTION-C : Database Management Systems: Database Systems Introduction and Fundamentals.: Database Systems: Introducing the database and DBMS, Why the database is important, Historical Roots: Files and File Systems, Problems with File System Data Management, Database Systems. Data Models: The importance of Data models, Data Model Basic Building Blocks, Business Rules, The evaluation of Data Models, Degree of Data Abstraction. The Relational Database Model: A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system catalog, Relationships with in the Relational Database, Data Redundancy revisited, Indexes, Codd's relational database rules. **Data Modeling and** Normalization: Entity Relationship Model: The ER Model, Developing ER Diagram, Database Design Challenges: Conflicting Goals. Advanced Data Modeling: The Extended Entity Relationship Model, Entity clustering, Entity integrity: Selecting Primary keys, Design Cases: Learning Flexible Database Design. Normalization of database tables: Database Tables and Normalization, The need for Normalization, The Normalization Process, Improving the design, Surrogate Key Considerations, High level Normal Forms, Normalization and database design, denormalization.Interaction with Databases and Construction of Information System . Introduction to SQL: Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, Joining Database Tables. Advanced SQL: Relational Set Operators, SQL Join Operators, Subqueries and correlated queries, SQL Functions, Oracle Sequences, Updatable Views, and Procedural SQL. Database Design: The Information System, The Systems Development Life Cycle, The Database Life Cycle, Database Design Strategies, Centralized

Vs Decentralized design.Transaction Management in DBMS Environment**;** Transaction Management and Concurrency Control: What is transaction, Concurrency control, Concurrency control with locking Methods, Concurrency control with time stamping methods, concurrency control with optimistic methods, database recovery management. Distributed Database Management Systems: The evolution of Distributed Database Management Systems, DDBMS advantages and Disadvantages, Distribution Processing and Distribution Databases, Characteristics of Distributed database management systems, DDBMS Components, Levels of Data and Process distribution, Distributed database Transparency Features, Distributed Transparency, Transaction Transparency, Performance Transparency and Query Optimization, Distributed Database Design, Client Server VS DDBMS.Data Warehouse Concepts and Database Administration**:** The Data Warehouse: The need for data analysis, Decision support systems, The data warehouse, Online analytical processing, Star schemas, Data mining, SQL extension for OLAP. Database Administration: Data as a Corporate asset, The need for and role of databases in an organization, The evolution of the database administration function, The database environment's Human Component, Database administration Tools, The DBA at work: Using Oracle for Database Administration.

Test No.11 Economics

Section A Micro Economics: Nature, Definition and scope of Economics – Methodology in Economics – Micro and Macro, Static and Dynamic, Normative and Positive – Indicatives and Deductive Analysis – Partial and General Equilibrium – Choice as an economic problem. CONSUMER BEHAVIOUR:Utility Analysis – Cardinal and ordinal approaches – Law of Diminishing marginal utility, Law of Equi-marginal utility, Indifference curves – Properties of indifference curves – Price (Budget) line – Equilibrium of the consumer with the help of indifference curves. Demand Analysis – Law of demand – Elasticity of Demand – Price, Income and cross elasticities, Demand forecasting – Meaning and factors influencing demand forecasting – Consumer surplus – Engel curve.THEORY OF PRODUCTION AND COSTS: Objectives of a firm – Production function – Concept of Cobb-Douglas production function – Isoquant – Factor substitution - Law of variable proportions, law of Returns to Scale – Expansion path – Different Concepts – of Revenue and Costs and their interrelation – Equilibrium of the film – Break – Evan analysis.MARKET STRUCTURE: Market forms – Perfect and Imperfect markets. Price Determination and Equilibrium of a firm and industry under perfect competition – Monopoly – Price determination under monopoly – Price discrimination – Monopolistic competition – Price determination. Oligopoly (Kinked demand curve).FACTOR PRICING: Marginal productivity theory of distribution – Theories of wage determination – Wages and collective bargaining: Minimum Wage – Rent – Scarcity rent, Differential rent – Quasi rent. Interest – Classical, Neo-Classical and Keynesian theories – Profit – Dynamic, Innovations, Risk and Uncertainty theories.

SECTION-B MACRO ECONOMICS: NATIONAL INCOME: Meaning, Definition and importance of Macro Economics – National Income: Meaning, Definitions: National Income, GNP & NNP, GDP & NDP, Personal Income (PI), Disposable Income (Di), Per Capita Income (PCI), Real National Income (RNI) – Methods of Estimation of National Income (NI) – Measurement of National Income in India.THEORIES OF EMPLOYMENT: Classical theory of employment – Say's law of markers – Keynesian theory of employment – Consumption function – APC, MPC, factors influencing consumption function – Investment function – MEC and Rate and Rate of Interest and the concept of Multiplier – Accelerator – Applicability of the Keynesian theory to the developing countries.MONEY AND THEORIES OF MONEY Meaning, functions and classification of Money–Gresham's law – R.B.I. Classification of Money – M1, M2, M3, M4 Theories of Money – Fisher's quantity theory of Money, Cambridge approach (Marshall, Pigou, Robertson and Keynes).TRADE CYCLE AND INFLATION: Trade cycles – Meaning and definition – Phases of a trade cycle – Inflation – Definition – Types of Inflation – Causes and effects of inflation – Measures to control inflation.BANKING, STOCK MARKET AND INSURANCE: Functions of Commercial banks – The process of credit creation – Concept of Non Banking Finance Companies (NBFCs) – Concept of SEBI Stock Market – Meaning, functions and importance of Stock Market – Primary and Secondary Markets, Concepts of (a) Shares (b) Debentures, Insurance – Types of Insurance – Life Insurance and General Insurance – Functions of the Reserve bank of India – Methods of credit control – Quantitative and Qualitative Methods.

SECTION-C INDIAN ECONOMY: CONCEPTS OF DEVELOPMENT:Meaning of Economic growth and development – Measures of Economics Development – GNP, PCL, PQLI and HDI, Factors influencing Economic development – Sustainable development – Balanced and unbalanced growth – Choice of Techniques Labour intensive and capital intensive methods. STRUCTURE OF THE INDIAN ECONOMY: Basic features – Natural Resources – Land, Water and Forest resources, Basic demographic features –

Size and growth of the population – Age and sex composition Rural and Urban population – Occupational distribution – Population policy, National income in India – Trends and Composition – Poverty, Inequalities and unemployment Causes and consequences – Current Five Year Plan – Objectives, Mobilization and Allocation of Resources – New Economic Reforms – Liberalization, Privatization and Globalization in India – Inclusive Growth.INDIAN AGRICULTURE: Nature and importance, Trends in agricultural Production and Productivity: factors determining productivity. Rural Credit – Micro Finance and Self Help Groups (SHGs) Agricultural price policy, Crop insurance, Agricultural Infrastructure and food security. (1) Agricultural Marketing in India, (2) Inspect of Land, informs in India, (3) Provision of Agricultural credit to the tenants. INDIAN INDUSTRY AND SERVICES: Structure and Growth of Indian Industry-Industrial policies of 1956 and 1991, Growth and problems of Small Scale Industry. Foreign Exchanges Management Act (FEMA): Disinvestment Policy in India – Foreign Direct Investment – Growing important of Service Sector in India – Banking Insurance, Information Technology, Education and Health. ANDHRA PRADESH STATE ECONOMY:GSDP – Sectoral Contribution and Trends; Human Resources–Population Trends, Regional differentials – Demographic Dividend, Agricultural Sector – Land use and Cropping pattern = Impact of hand reforms in A.P. Income and employment in Agricultural sector. Industrial Sector – Small Scale industries, Investment and employment in industrial sector, SEZs; Service Sector – Growth of income and employment in the service sector, Information, Technology (IT).

Test No.12 **English**

Section A

POETRY

Title of the Poem	Name of the Poet
1. Ode to Autumn	John Keats
2. Dover Beach	Mathew Arnold
3. The Unknown Citizen	W. H. Auden
4. Poem – 36	Rabindranath Tagore
5. Myriad-Winged Bird	A. Satyavathi Devi
6. Telephone Conversation	Wole Soyinka

PROSE

Title of the Prose Lesson	Name of the Author
1. Is Progress Real?	Will Durant
2. Stephen Leacock	Conjuror's Revenge
3. The Best Investment I Ever Made	A. J. Cronin
4. Prospects of Democracy	Dr. B. R. Ambedkar
5. I Have a Dream	Martin Luther King
6. Letter to a Teacher	Nora Rossi and Tom Cole

GRAMMAR AND VOCABULARY

1. Reading Comprehension
2. Verb Forms
3. Right Words (Synonyms, Antonyms, Homonyms and One-Word Substitutes)
4. Idioms Detection of Errors

Section B

POETRY

Title of the Poem	Name of the Poet
1. The Sunne Rising	John Donne
2. The Solitary Reaper	William Wordsworth
3. Road Not Taken	Robert Frost
4. Refugee Mother and Child	Chinua Achebe
5. Good Bye Party for Mrs. Pushpa T. S.	Nissim Ezekiel
6. I will embrace only the sun	Tripuraneni Srinivas(***Down to Earth***, Post-Modern Telugu Poetry, OUP)

PROSE

Title of the Prose Lesson	Name of the Author
1. Mr. Know-All	Somerset Maugham
2. Film-Making	Satyajit Ray
3. Not Just Oranges	Premchand
4. Talk on Advertising	Herman Wouk
5. On Shaking Hands	A. G. Gardiner
6. Decolonizing the Mind	Ngugi wa Thiong'o

COMMUNICATION AND COMPOSITION

1. Resume Writing
2. e-Correspondence
3. Note-Making
4. Report Writing
5. Expansion of Proverbs and Ideas
6. Description of Pictures

Section C

Macmillan

Communication – Verbal and Non-Verbal

1. Spoken English with Group Discussion and Debates
2. Business Writing (types of CVs with Covering Letters)
3. e-Mail Writing (with principles)
4. News-Reading (compeering/anchoring)

Orient Longman

1. Presentation Skills
2. Facing an Interview (with Mock Role-Plays)
3. Listening Skills (for mood, tone, attitude)
4. Telephone Skills (listening/responding/initiating)

Test No.13 Social Work

Section A: Social Work: Definition, Nature & Scope, Origin of social work Profession in US and India. Religious roots of humanity, charity and philonthropy. Goals of social work – Developmental and radical; Generic Principles of Social Work, social work values and ethics; concepts of social work - social welfare, social service, social services, social development and social change; Fundamental Rights and directive principles of state policy in Indian Constitution. Social Reform Movements and Social Work Profession with special reference to Brahma Samaj, Arya Samaj and, Movements for widow-remarriage in A.P. Groups and Communities: Definition of group, characteristics, types of groups and communities; social stratification; social inequality and social exclusion. Understanding Human Behaviour: Stages of human development Heredity, Environment; Motivation and Perception. Personality -Definition; factors influencing personality. New economic order in contemporary India - Liberalization, privatization and globalization. Changing role of the state and NGOs.

SECTION-B Social Work Intervention – Basic Methods: Working with individuals – case work as a method of social work, definition, relevance; historical Development; Principles of case work; components of social case work – Person, Place, Problem, Professional and Process – study, diagnosis and treatment. Practice in different settings such as hospitals, schools, industry, correctional institutions and family. Techniques, Skills and recording : Techniques of case work – communication, listening, use of self with awareness, and professional relationships. Qualities of a helping relationship and a helping professional; skills in working with individuals –rapport establishment, interviewing, enabling, facilitation, resource mobilization, training, reflective thinking and analysis. Recording - principles, types. Discussion of a case record. Groups: Significance of group, group dynamics - Leadership, isolation, decision making, contagion, conflict, communication and relationships. Working with the groups – Group work as a method; historical development, values & Principles, skills in group work. Group work process, techniques of group work, use of group work in different fields of social work – hospitals, correctional settings, schools and communities, recording in group work. Discussion of a group record. Community– Problems of Communities, Community organization– Definition and scope as a method in relation to

other methods of social work. Principles, Skills and use of Community Organization: Principles of community organization; Skills of community organization practitioner-problem analysis, resource mobilization, conflict resolution, organizing meetings, writing and documentation and networking. Use of community organization in different settings - rural, urban, tribal and coastal.

SECTION-C Social work Intervention – Auxiliary Methods: Social Action: Meaning, scope, principles, various techniques and stages of social action. Social work research: Meaning, scope, difference between social work research and social research. Stages of social work research. Sampling – meaning; probability and non-probability sampling, types of sampling limitations. Tools of data collection - Questionnaire, Interview Schedule and observation. Development Administration: Meaning and nature. Principles – planning, organization, staffing, recording and budgeting. Basic requisites of forming a NGO: Constitution, By-laws, Memorandum of association; Registration of organization.

Test No.15 Journalism and Mass Communication

For Admission into Master in Journalism and Mass Communication the level of test will be of Graduate Standard.

SECTION- A Indian History, Indian National Moment, And Geography

SECTION – B Indian policy and Indian Economy

SECTION – C 1. Current National Events , 2. General Knowledge on International

Test No.16 Human Resource Management

Section A:*General Management & Organizational Behaviour*

1. Introduction to management : Definition, Description of Management functions- Nature, Role and Principles of Management
2. Management approaches, applications and limitations- Scientific management, Behavioural approach, Human relations movement, Management science approach, Systems approach to management process.
3. Management and society, Challenges of management, Social responsibilities and ethics- the process of management.
4. Planning- Management by Objectives (MBO), Decision Making- steps in decision making – Strategic planning
5. Organizing, Nature, Entrepreneuring and Reengineering- Organization structure- Empowerment and Decentralization
6. Direction: Motivation, Communication and leadership. Control mechanism
7. Organizational climate, Culture and Managing change through Manager and Organization Development.
8. Organization Behaviour- Models of Organization Behaviour, Individual and Individual and interpersonal Behaviour- Informal and formal Groups- Teams and Team Building –Organizational Conflict –
9. Management of conflict and Organizational Performance.
10. change and its effect, Managing change, Stress and Counselling – Organisational Behaviour across cultures.

Section B Human Resource Management:

1. Meaning of HRM- Evolution of HRM- role of HRM in the Organization – Personnel Management and HRM Functions of HRM (Managerial & substantive) HR Scenario in India- role of HR Practitioner- contemporary challenges in HRM
2. Human Resource Planning: Meaning- Evolution – Need and Objectives of HRP- Process of HRP – Human Resource Planning in India.
3. Recruitment and Selection : Need- Objectives- Sources of Recruitment- (Internal and External) – e- Recruitment – Outsourcing- Selection Methods- Test, Group Discussions, Interviews- Legal and constitutional framework relating to recruitment.
4. Induction, Training and Development: Definitions- Introduction to the Company and Workplace- Methods of Training- On the Job Training and Off- Job Training- Human Resource Development
5. employee compensation: Influencing factors- fixation of Wages and Salary – Fringe Benefits- Employee Welfare- Wage Legislation and Pay Commissions

6. Employee Separation: Redundancy- Outplacement- Downsizing- voluntary Leavers – Retirement.
7. Performance Management: Definition – Importance- Methods of Performance Appraisal- Use of 360 degree feedback.
8. International HRM- Definition – International HRM Models- Issues.
9. Strategic HRM- Meaning- Aims – Approaches.
10. Talent Management: Definition- Elements of talent management- Creating a great place to work – Attraction Strategies- Retention Strategies – Talent Management in Practice. Knowledge Management- Definition – Purpose and Significance- Role of HR in Knowledge Management.

Section C: Industrial Relations and Industrial Law

1. Concept of industrial relations, Dunlop's model of industrial relations- Evolution of Industrial relations in India.
2. Legislation on working Conditions and Employment: Relevant areas of the Indian legislation on : Factories Act 1948, Contract Labour Act, Industrial Employment Standing Orders Act.
2. Grievance Management: Grievance handling, model grievance procedure, Section 9 C, of Chapter II B of ID Act 1947- Employee counseling.
3. Industrial conflicts causes., manifestations and effects.
4. Employers and Employees associations and Industrial Relations:

a) Trade Unionism –Concept, profile, functioning, Problems and measures to improve functioning of trade unions.- the Trade Unions Act 1926 (Sections on Objectives, Registration and functioning of unions)- Recognition of bargaining agent.
b) Managerial and Employers Associations in India- role in industrial relations.
c) Workers Participation in management, works Committee (ID Act), other schemes for participation.

5. Collective bargaining- conciliation process, role and obligations of unions, management and government
6. Levels of CB Settlements, National Joint consultation models in steel, banking, ports and docks.
7. Employee discipline- Causes and consequences of indiscipline- Disciplinary Procedure- Industrial Employment Sanding Orders Act 1946 and Supreme Court directions.
8. Prevention and settlement of disputes- Study of relevant sections of Industrial Disputes Act 1947.
9. Industrial disputes Act 1947: Objectives of the Act, Scope and Applications, Definitions, Sections on: Authorities under the Act, Notice of change, Strikes, lockouts, layoff, retrenchment, closure.
10. State of unionism, Industrial Relations and collective bargaining

Test No.17 M.Com

Section A:: Introduction to Accounting: Need for Accounting – definition, features, objectives, functions, systems and bases and scope of accounting - Book keeping and Accounting - Branches of Accounting - Advantages and limitations-basic terminology used- – Accounting concepts and conventions. Accounting Process-Accounting cycle-Accounting equation-classification of accounts-rules of double entry book keeping – identification of financial transactions- Journalizing –Posting to Ledgers, Balancing of Ledger Accounts – Computerized Accounting: Meaning and Features-Advantages and disadvantages of computerized Accounting Creating of an Organization - Grouping of accounts – Creation of Accounts – creation of inventory-creation of stock groups-,stock categories, units of measurement-stock items-entering of financial transactions-types of vouchers-voucher entry-editing and deleting of vouchers-voucher numbering-customization of vouchers. Subsidiary Books and Bank Reconciliation Statement: Sub Division of Journal-Preparation of Subsidiary Books including different types of cashbooks- simple cashbook, cashbook with cash and discount columns, cashbook with cash, discount and bank columns, cashbook with cash and bank columns and petty cash book. Preparation of sales register, purchase register, journal proper, debit note register, credit note register, and different cash books including interest and discount transactions using computers. Bank Reconciliation Statement- Need - Reasons for difference between cash book and pass book balances - problems on favorable and over draft balances - Ascertainment of correct cash book balance. Preparation of bank reconciliation statement using computers.Trial Balance, Final Accounts; Errors and Rectification. Trial Balance: meaning, objectives, methods of preparation - Final Accounts: Meaning, features, uses and preparation of Manufacturing, Trading Account, Profit & Loss Account and Balance

Sheet-Adjusting and Closing entries. Preparation of trial balance, trading, profit and loss account, processing of year ending and closing the books, adjusting and closing entries and balance sheet using computers.Errors and their Rectification - Types of Errors - Rectification before and after preparations of final Accounts - Suspense Account- Effect of Errors on Profit. Rectification of errors using computers. Consignment and Joint Ventures: Consignment - Features, Terms used Proforma invoice - Account sale Delcredere commission -Accounting treatment in the books of the consignor and the consignee - Valuation of consignment stock - Normal and abnormal Loss - Invoice of goods at a price higher than the cost price. Joint ventures -features-difference between joint venture and consignment, Accounting Procedure – Methods of keeping records for Joint venture accounts-method of recording in co ventures books-separate set of books method. Depreciation - Provisions and Reserves: Meaning of Depreciation - Causes- objects of providing for depreciation -Factors affecting depreciation - Accounting Treatment- Methods of providing depreciation - Straight line method - Diminishing Balance Method. Provisions and Reserves - Reserve Fund – Different Types of Provisions and Reserves.

SECTION-B BUSINESS ECONOMICS : Economic and Non-Economic Activities—Business-Meaning—Economics-Definitions--micro and macro economics-method of economics-positive and normative—inductive and deductive approaches—reading of graphs-concept of slope—Utility-cardinal and ordinal utility-Law of diminishing marginal utility-Law of Equi-marginal Utility. Demand, Supply and Market Equilibrium:Demand-meaning-individual demand—law of demand-properties of demand curve-income effect and substitution effect-exceptions to the law of demand—individual demand and Market Demand—demand function—determinants of demand and market demand—shift of demand vs. movement along a demand curve—Elasticity of demand-price elasticity-meaning and measurement-price elasticity and total revenue of a firm-income elasticity-classification of goods based on income elasticity-cross elasticity-classification of goods into substitutes and complements—Supply-law of supply-determinants of supply—market equilibrium—concept of consumer surplus.Production and Costs: Production function—Distinction between short-run and long-run—Production with one variable input-relationship between total, marginal and average production functions-law of variable proportion—production with two variable inputs-isoquants -isocosts-techniques of maximization of output, minimization of cost and maximization of profit-scale of production-economies and diseconomies of scale—Cost of production-cost function—short-run total and average costs—long-run total and average cost. Market Structure and Factors of Production: Market structure-characteristics-perfect competition-characteristics-equilibrium price-profit maximizing output in the short and long-run—Monopoly-characteristics-profit maximizing output in the short and long run-defects of monopoly—monopolistic competition-characteristics-product differentiation-profit maximizing price and output in the short and long-run-Oligopoly-characteristics-price rigidity-the kinked demand curve-Factors of Production. National Income, Trade Cycles and International Trade: National Income-definition-measurement-GDP-meaning-fiscal deficit-economic systems-socialism-mixed economy system-free market economies- Concepts of Economic Liberalistion, privatization, Globalisation-WTO-objectives-agreements-functions-Trade cycles-meaning-phases-consequences-remedies-International Trade-Balance of payments.

SECTION-C Business Organization and Management: Fundamental Concepts: Concepts of business, trade, industry and commerce- Business-features of business, Trade - Classification- Aids to Trade-Industry- Classification -Commerce- Relationship between trade, industry and commerce- Business Organization-Concept-Functions of Business. Entrepreneur-Meaning-Characteristics of Entrepreneurs - Types of Entrepreneurs-Functions of an entrepreneur - Steps to start Enterprise- Sources of finance - Long Term-Short Term. Forms of Organization, Sole Proprietorship, Partnership and Joint Hindu Family: Business Organization – Forms of Business Organization – Classification – Factors influencing the choice of suitable form of organization. Sole Proprietorship -Meaning –Characteristics – Advantages and disadvantages – suitability. Partnership – Meaning –Characteristics –Kinds of partners- Registration of partnership – Partnership deed – Rights and obligations of partners - Joint Hindu Family Business – Characteristics – Advantages and limitations.Joint Stock Company: Joint Stock Company – Meaning – Characteristics –Advantages - Kinds of Companies – Difference between private and public companies – Promotion of A Company: Promotion –Stages-Promoters –Characteristics –Registration –Capital subscription – Commencement of Business – Preparation of Important documents – Memorandum of Association – Significance – Clauses – – Articles of Association – Contents —- Prospectus – Contents – Statement in lieu of Prospectus. Management, Planning and Decision Making: Management- Meaning – Significance- Management Vs Administration – Functions of management – Levels of Management –

Skills of management –Leadership-Leader Vs Manager-Traits of successful Leaders- Scientific Management – features- Fayol's Principles of Management . Planning – Meaning – Significance –Types of Plans – Decision making – Steps in Process Decision making process Organizing
Organizing – meaning - Organization – Features – the process of organization – principles of organization- Elements of organizations –organization chart. Delegation of authority – meaning - Elements – Principles – Types – Difficulties in delegation – Guidelines for making delegation effective. Centralization – Decentralization –Meaning – Differences between delegating and decentralization.

Test No.18 M.Ed.

Section A
Teacher and Education in Emerging Indian Society; School Management
Section B
Educational Psychology and Statistics
Section C
Education Technology & Computer Education.

Test No.19 STATISTICS
SECTION A:
Descriptive Statistics and Probability Distributions:
1. Descriptive Statistics: Concept of primary and secondary data. Methods of collection of primary data and secondary data. Classification and tabulation of data. Measures of central tendency (mean, median, mode, geometric mean and harmonic mean) topics are constrained to definitions merits and demerits only (but proofs are not necessary). Concepts of absolute & relative measure of dispersion (range, quartile deviation, mean deviation, and standard deviation)
2. Importance of moments, central and non-central moments, and their interrelationships, Sheppard's corrections for moments for grouped data. Measures of skewness based on quartiles and moments and kurtosis based on moments with suitable examples.
3. Basic concepts in Probability—deterministic and random experiments, trail, outcome, sample space, event, and operations of events, mutually exclusive and exhaustive events, and equally likely and favorable outcomes with examples. Mathematical, statistical and axiomatic definitions of probability with merits and demerits. Properties of probability based on axiomatic definition. Conditional probability and independence of events. Addition and multiplication theorems for n events. Boole's inequality and Bayes' theorem. Problems on probability.
4. Definition of random variable, discrete and continuous random variables, functions of random variables, probability mass function and probability density function with illustrations. Distribution function and its properties. Transformation of one-dimensional random variable (simple 1-1 functions only). Notion of bivariate random variable, bivariate distribution and statement of its properties. Joint, marginal and conditional distributions. Independence of random variables.
5. Mathematical Expectation: Mathematical expectation of a function of a random variable. Raw and central moments and covariance using mathematical expectation with examples. Addition and multiplication theorems of expectation. Definition of moment generating function (m.g.f), cumulant generating function (c.g.f), probability generating function (p.g.f) and characteristic function (c.f) and statements of their properties with applications. Chebyshev's , and Cauchy-Schwartz's inequalities. Statement of weak law of large numbers and central limit theorem for identically and independently distributed (i.i.d) random variables with finite variance.
6. Discrete distributions: Uniform, Bernoulli, Binomial, Poisson, Negative binomial, Geometric and Hypergeometric (mean and variance only) distributions. Properties of these distributions such as m.g.f., c.g.f., p.g.f., c.f., & derive moments up to second order from them. Reproductive property wherever exists. Binomial approximation to Hyper-geometric, Poisson approximation to Binomial and Negative BD.
7. Continuous distributions: Rectangular and Normal distributions. Normal distribution as a limiting case of Binomial and Poisson distributions. Exponential, Gamma, Beta of two kinds (mean and variance only) and Cauchy (definition and c.f. only) distributions. Properties of these distributions such as m.g.f., c.g.f.,c.f., and moments up to fourth order, their real life applications and reproductive productive property wherever exists.

SECTION B:

Statistical Methods and Inference:

1. Bivariate data, scattered diagram Correlation coefficient and it's properties. Computation of correlation coefficient for grouped data. Correlation ratio, Spearman's rank correlation coefficient and it's properties. Simple linear regression properties of regression coefficients, correlation verses regression. Principles of least squares, fitting of quadratic and power curves. Concepts of partial and multiple correlation coefficients (only for three variables).
2. Analysis of categorical data, independence and association and partial association of attributes, various measures of association (Yule's)& coefficient of colligation for two way data and coefficient of contingency (pearsonss's & Tcheprow's)
3. Concept of population, parameter, random sample, statistic, sampling distribution and standard error. Standard error of sample mean (s) and sample proporations (s). Exact sampling distributions:- Statements and properties of X^2,t, &F distributions and their inter relationships.
4. Point estimation of a parameter. Concept of bias and mean square error of an estimate. Criteria of good estimator-consistency, unbiasedness, efficiency and sufficiency with examples. Statement of Neyman's Factorisation theorem, derivations of sufficient statistics in case of Binomial, Poisson, Normal and Exponential (one parameter only) distributions. Estimation by the method of moments, Maximum likelihood (ML), statements of asymptotic properties of MLE. Concept of interval estimation. Confidence Intervals of parameters of normal population.
5. Concepts of statistical hypothesis, null and alternative, hypothesis, critical region, two Types of errors, level of significance and power of a test. One and two tailed tests, Neyman pearson"s fundamental lemma for Randomised tests. Examples in case of Binomial, poisson, Exponential and Normal distributions and their powers. Use of central limit theorem in testing large sample tests and confidence intervals for mean(s), proportion(s), standard deviation(s) and correlation coefficient(s).
6. Test of significance based on X^2, t, F. X^2-test for goodness of fit and test for independence of attributes. Definition of order statistics.
7. Non-Parametric tests their advantages and disadvantages, comparison with parametric tests. Measurement scale: nominal, ordinal, interval and ratio. One sample runs test, sign test and Wilcoxon-signed rank tests (single and paired samples). Two independent sample tests: Median test, Wilcoxon – Mann-Whitney U test, Wald Wolfowitz's runs test.

SECTION C:

APPLIED STATISTICS:

Design of Sample Surveys: Concept of population, sample, sampling unit, parameter, statistic, sampling errors, sampling distribution, sample freme and standard error. Principle steps in sampling surveys-need for sampling, census verses samples surveys Sampling and non-sampling errors, sources and treatment of non-sampling errors, advantages and limitations of sampling. Types of sampling: subjective, probability and mixed sampling methods. Methods of drawing random samples with and without replacement. Estimates of population mean, total and proportion, their variances and estimates of variances in the following methods

i) SRSWRAND SRSWOR

ii) Stratified random sampling with proportional and Neyman allocation.

Comparison of relative efficiencies. Concept of Systematic sampling N=nk Analysis of Variance and Design of Experiments: ANOVA-one-way, two way classifications with one observation percell-concept of Gauss - Markoff linear model, Statement of Cochran's theorem, Mathematical Analysis, importance and applications of design of experiments. Principles of Experimentation, Analysis of Completely randomized Design (CRD), Randomized Block Design (RBD) and Latin Square Design (LSD).

Time Series: Time series and it's components with illustrations, additive, multiplicative and mixedmodels, Determination of trend by least squares, moving average methods Determination of Seasonal indices by Ratio to moving average, Ratio to trend and link relative methods. Index Numbers: Concept, Construction, uses and limitations of simple and weighted index numbers, lasperyer's, Paasche's and Fisher's Index numbers. Fisher's index as ideal index number. Fixed and chain base index numbers. Cost of living index numbers and wholesale price index numbers. Base shifting,Splicing and deflation of index numbers.

Official Statistics: Functions and organization of CSO and NSSO. Agricultural Statistics, area and yield statistics. National Income and it's coputation, utility and difficulties in estimation of National income. Vital Statistics: Introduction, definition and uses of vital statistics. Sources of vital statistics, registration method and census method. Rates and ratios, Crude Death rate, age specific death rate, standardized death rates, crude birth rate, age specific fertility rate, general fertility rate, total fertility rate. Measurement of

population Growth, crude rate in natural increase – Pearl's vital index. Gross reproductive rate and net reproductive rate, Life tables, contruction and uses of life tables and abridged life tables.
Demand Analysis: Introduction, Demand and supply, price elastics of supply and demand. Methods of determining demand and supply curves, Leontief's, Pigous's methods of determining demand curve from time series data, limitations of these methods.

Test No.14 **Telugu**

Section - A

ప్రాచీన కవిత్వం

1. నన్నయ - గంగాశంతనుల కథ
   ఆంధ్ర మహాభారతం - ఆదిపర్వం - నాల్గవ ఆశ్వాసం (120-165) "నరనరుడగు శంతనునకు" నుండి "దివ్యభూషణాలంకృత" వరకు
2. తిక్కన - మూషిక మార్జాల వృత్తాంతం
   ఆంధ్రమహాభారతం - శాంతిపర్వం - మూడవ ఆశ్వాసం (202-242) అడవిలో నొకమఱ్ఱి ---------- నుండి సౌఖ్యము బొందెన్.
3. అల్లసాని పెద్దన - హంసీచక్రవాక సంవాదం
   మనుచరిత్రము - ఆరవ ఆశ్వాసం (62 - 88) "గంగాతరంగిణి" నుండి "జంభారి భిదుర సంరంభము" వరకు
4. తరిగొండ వెంగమాంబ - ఎఱుకత
   శ్రీ వేంకటాచల మహాత్మ్యం - ఐదవ ఆశ్వాసం (4-15) "వకుళను వివాహ ప్రయత్నంబు" నుండి "అనియిట్లు" వరకు
5. పోతన - వామనావతారము
   ఆంధ్ర మహాభాగవతము - ఎనిమిదవ స్కంధం (585-621) "కులమున్ రాజ్యము" నుండి "రవిబింబంబుపమింప" వరకు
6. కోణవిగోపరాజు - శాలివాహన విజయం
   సింహాసన ద్వాత్రింశిక - ఒకటవ ఆశ్వాసం (115 - 165) "సజ్జిత దానధర్మ" నుండి "ఇట్లు విక్రమార్కుఢీల్గిన వరకు
7. రఘునాథనాయకుడు - గ్రీష్మర్తువు - బోయపల్లి వాల్మీకి చరిత్ర - రెండవ ఆశ్వాసం (70 - 100) "కోకిల కంఠ" నుండి "అనిన నమ్మోను" వరకు

Section - B

ఆధునిక కవిత్వం

8. గరిమెళ్ళ సత్యనారాయణ - మాకొద్దీ తెల్లదొరతనము
9. శ్రీ శ్రీ - మహాప్రస్థానం
10. జాషువ - ముసాఫరులు
11. పుట్టపర్తి నారయణాచార్యులు - మేఘదూతలు
12. కుసుమ ధర్మన్న - ఆలకింపుమయ్య హరిజన శతకము (1-20) "శ్రీహరినుత సీదు" నుండి "నీకులంబువారు" వరకు.
13. పింగళి, కాటూరి - సౌందర నందము నుండి ధర్మసందాదము (" అల్లననిల్చి" నుండి "అసదృశమ్మగు" వరకు)
14. కాళోజీనారాయణరావు - బతకమ్మా! బ్రతుకు (నాగొడవలోంచి) "గుమ్మడిపూలు" నుండి "అమ్మనుమరువని" వరకు.
15. డా॥ అంబెశ్రీ - మనిషి
16. బెళ్ళారి శ్రీనివాసమూర్తి - రాయలసీమ - గంజి కేంద్రము ("తపోవనము" లోంచి) "ఏ తపస్వి" నుండి "కనులేకానగరాని" వరకు
17. నిమల - వంటిల్లు "ఎంత అద్భుతమైంది" నుండి "ఒంటరి వంటగదులు" వరకు

కథానికలు

18. పాలగుమ్మి పద్మరాజు - గాలివాన
19. కొలకలూరి ఇనాక్ - ఆకలి
20. కేతువిశ్వనాథ రెడ్డి - నమ్మకున్నవేల
21. పాట్లనల్లి రామారావు - జైలు

Section - C

వ్యాకరణం

22. సంధులు - సవర్ణదీర్ఘ, గుణ, యణాదేశ, వృద్ధి, త్రిక, గ.స.డ.దవాదేశ, రుగాగమ, టుగాగమ, ఆమ్రేడిత, ఆత్వసంధి మొదలైనవి.
23. సమాసాలు - తత్పురుష కర్మధారయ, ద్వంద్వ, ద్విగు, బహువ్రీహి మొదలైనవి.
24. ఛందస్సు - ఉత్పలమాల, చంపకమాల, శార్దూలము, మత్తేభము, కందము, తేటగీతి, ఆటవెలది.
25. అలంకారాలు - ఉపమ, రూపక, ఉత్ప్రేక్ష, స్వభావోక్తి, అతిశయోక్తి, అర్థాంతరన్యాస, దృష్టాంతము.
26. సామాన్యవ్యాసాలు - సమకాలీన సాంస్కృతిక, వైజ్ఞానిక, సామాజిక అంశాలు.

డిగ్రీ రెండవ సంవత్సరం పాఠ్యగ్రంథాన్ని మూరుతి పబ్లిషింగ్ హౌస్, హైదరాబాదు వారు ప్రచురించడానికి సిఫారసుచేస్తూ తీర్మానించి అనుమతి కోరడమైనది.

మాదిరి ప్రశ్నలు

1. గంగాశంతనుల కథ ఏ గ్రంధంలోనిది.
   a) ఆంధ్ర మహాభారతం
   b) మను చరిత్రము
   c) వసుచరిత్రము
2. రాముడు + అతడు = రాముడతడు
   a) గుణ సంధి b) సవర్ణ దీర్ఘ సంధి
   c) యడగమ సంధి d) ఏదీకాదు

ALL QUESTIONS IN THE KRUCET 2016 WILL BE MULTIPLE CHOICE QUESTIONS:

EXAMPLE:
Model Question:
Isotopes contain
a) Same atomic number b) same atomic mass c) same number of electrons d) 1 & 2

ANNEXURE - A

(Use this form as Original)

LOCAL CANDIDATE CERTIFICATE FORM – I

I certify that Mr. / Ms. …… Son / Daughter / Wife of ……..… a candidate for admission to the …… studying in the following educational institutions during the four or more consecutive academic years ending with the academic year in which he / she appeared in the above qualifying examination.

S. No	College Name	educational Qualification	Place	Year
1.				
2.				
3.				
4.				

and thus is a Local candidates in the Krishna University area within the meaning of G.O.Ms. No.453 General Administration (SLF-B) dt. 3rd July, 1974.

SIGNATURE

Place :
Date :

Designation:
(with Office Seal)

FORM – II

Admissions for …… Course.

1. It is hereby certified a) that ……..…….. S/o, D/o …….…….

   a) Candidate for admission to the ……..…… course, appeared for the first time for the ……..…… examination (belong the minimum qualifying examination for admission to the course mentioned above) in …….. (Month) …… (Year)

   b) that he /she has not studied in any educational institution during the whole period or a part of the four consecutive academic years ending with the academic year in which he / she first appeared for the aforesaid examination.

   c) that in the four years immediately preceding the commencement of the aforesaid examination he / she resided in the following place / places falling within the Local area in respect of University, namely.

      1.

      2.

      3.

      4.

2. The above candidate is, therefore, a Local candidate in relation to the Local area specified in paragraph 3(1) / 3(2) / 3(8) of the Andhra Pradesh Educational Institutions (Regulation of Admission) order 1974.

Place : Officer of Revenue Department
Date :
Office Seal : (Not below the rank Mandal Revenue Officer)

FORM – III

(STUDY CERTIFICATE)

(Applicable only to candidates who have studied in Andhra Pradesh for at least seven consecutive years and to whom Form-I does not apply)

It is hereby certified (a) that ……..…… S/o / D/o …….. a candidate for admission to the ……-……...……Course appeared, or, as the case may be, first appeared for the to the course mentioned above) in …….……. (Month) ……..…… (Year) (b) that he / she has studied in educational institutions in the State of Andhra Pradesh for a period of not less than seven consecutive academic years ending with the qualifying examination mentioned in para (a) as indicated below.

S. No	No. of Years	College or Educational Institution in which studied	Place	Academic Years
1.				
2.				
3.				
4.				
5.				
6.				
7.				

(c) and that therefore he / she having studied for the maximum period or equal period, as the case may be, within the Krishna University area the meaning of the Andhra Pradesh Educational Institutions, (Regulations of Admission) Order 1974 as amended by the second Amendment Order (vide G.O.Ms.816 Gen. Admn. A.P.E.-B) date 22-11-86) is a Local candidate.

Place :
Date :`

Principal of the College / Institution
(in which candidate last studied)

Designation:
(with Office Seal)

FORM – IV

(CERTIFICATE OF RESIDENCE)

Applicable only to candidates who resided in the State of Andhra Pradesh for seven consecutive years preceding the qualifying examination whether or not he / she studied in any educational institution in the state of Andhra Pradesh.

It is hereby certified (a) that ……..…… S/o / D/o …….. a candidate for admission to the …… …….. Course appeared for the ……. examination (being the relevant qualifying examination for admission to the course mentioned above) in …… (Month)…….Year (b) that he / she has not studied in any educational institutions in Andhra Pradesh during the whole part of period of seven years ending with the qualifying examination, but resided within the state of Andhra Pradesh during the whole of the said period within the Krishna University area as detailed below.

S. No	No. of Years	College or Educational Institution in which studied	Place	Academic Years
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Place :
Date :
Office Seal :

Officer of Revenue Department

(Not below the rank Mandal Revenue Officer)

ANNEXURE-B

DECLARATION FORM

(To be given by the Applicant and the Parent)

I ……... abide by the rules and regulations of admissions for the academic year 2016-17.

Signature of the Parent / Guardian

Signature of the Applicant

Date:

KRISHNA UNIVERSITY

PG ADMISSIONS FOR THE ACADEMIC YEAR 2015-16

OMR ANSWER SHEET

KRUCET - 2015

OMR Sheet No. :

SECTION I

Hall Ticket Number :**23654879**

Name :**V. RAMBABU**

centre :**MRAR COLLEGE NUZIVID**

Date & Time :**05-04-2015 02:00pm to 04:00pm**

Test No. :**04**

Subject Code :**104 M.Sc. Organic Chemistry**

Signature of the Candidate	Signature of the Invigilator

SECTION II

KRISHNA UNIVERSITY PG ADMISSIONS
OMR ANSWER SHEET

Do not write anything in this box

RESERVATION		RESERVATION		GENDER		STATUS		TEST Code
ST	1	PH	9	MALE	M	Local	1	0 0
SC	2	CAP	10	FEMALE	F	Non-Local	2	1 1
BC-A	3	NCC	11					2
BC-B	4	SPORTS	12					3
BC-C	5							4
BC-D	6							5
BC-E	7							6
OC	8							7
								8
								9

USE HB PENCIL ONLY

ANSWERS

(Use **HB PENCIL** Only to darken the Circles)

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
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6	A	B	C	D
7	A	B	C	D
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97	A	B	C	D
98	A	B	C	D
99	A	B	C	D
100	A	B	C	D