AM category

Appl.No. AM _____

ENGINEERING, AGRICULTURAL & MEDICAL COMMON ENTRANCE TEST

(on behalf of APSCHE)

EAMCET–2007

(AGRICULTURE & MEDICINE)

on 04-05-2007 from 2-30 p.m to 5-30 p.m

INSTRUCTION BOOKLET

FOR ENTRANCE TEST RELATING TO PROFESSIONAL COURSES IN

A) B.V. Sc and A.H/B.Sc (Ag)/B.Sc (Hort)/B.F.Sc/B.Tech (FS&T)/B.Sc (CA & BM)

B) MBBS/BDS/BAMS/BHMS/BNYS

C) B. Pharmacy courses

Note:

1. This booklet contains i) Application form (ii) 12" x 10" envelope and (iii) Acknowledgement Card.
2. Fill in the application form carefully and submit through online (OR) Fill in the Application form and Acknowledgement Card after carefully reading the instructions and keep them in the envelope supplied to you and submit in person either to the respective Regional Coordinator (as listed in this booklet) or to *the Convener, EAMCET-2007* or send it by *Registered Post with Ack*, so as to reach the Convener on or before **08-03-2007** by 5 p.m without late fee.
3. The application number printed above should be quoted for reference, in all further correspondence.
4. Information about the Entrance test is also available on the Net at http://www.eamcet2007.org.

LAST DATE FOR SUBMISION OF APPLICATION

WITHOUT LATE FEE (to the respective Regional Co-ordinator or the Convener, EAMCET – 2007 or Online)	**08-03-2007 (before 5.00 p.m)**
WITH LATE FEE* OF Rs. 600/- (only at the Convener's Office, Hyderabad in person or by post)	**23-03-2007 (before 5-00 p.m)**

LATE FEE is to be paid in the form of a Demand Draft obtained from any Nationalized Bank, payable at *HYDERABAD* in favour of *The Convener, EAMCET - 2007

Address for correspondence:

CONVENER, EAMCET – 2007
SIT BUILDING, CELLAR PORTION, JNT UNIVERSITY
KUKATPALLY, HYDERABAD – 500 085.
ANDHRA PRADESH

EAMCET – 2007 (Agriculture & Medicine Category)

A Common Entrance Test designated as "Engineering, Agricultural & Medical Common Entrance Test" (EAMCET – 2007) will be conducted by JNT University, for the academic year 2007-2008 for seeking entry into the First Year of professional courses (a) B.V.Sc. & A.H. / B.Sc. (Ag.)/ B.Sc.(Hort.)/ B.F.Sc., / B.Tech (Food Science and Tech) (Bi.P.C)/B.Sc (Commercial Agri. & Business Mgt) (Bi.P.C) (b) MBBS / BDS / BAMS / BHMS / BNYS Courses (c) B.Pharm (Bi.P.C.).

Note : The application form is for Common Entrance Test only. Candidates have to apply / attend counselling for admission separately as and when the notification is issued.

I. PARTICULARS OF EAMCET – 2007

The examination is on **04-05-2007** between **2.30 PM and 5.30 PM**.

The Entrance test is of 3 hours duration and the question paper consists of a total 160 questions comprising of a total of 80 questions in Biology (Botany – 40, Zoology – 40), 40 questions in Physics and 40 questions in Chemistry.

"All questions will be of objective type (multiple choice) only and each question carries one mark. The syllabus in Biology, Physics and Chemistry is furnished in Annexure-I. The model questions and model OMR Response sheet along with instructions are given in Annexure - II".

II. ELIGIBILITY TO APPEAR FOR EAMCET – 2007

Candidates satisfying the following requirements shall be eligible to appear for EAMCET-2007.

a. Candidates should be of Indian Nationality.

b. Candidates should belong to the state of Andhra Pradesh. The candidates should satisfy local/non-local status requirements as laid down in the A.P. Educational Institutions (Regulation of Admission) order, 1974 and its amendment vide G.O.P.No. 646, dated 10.07.1979 of Education (W) Department. Details of definitions of Local/Non-local candidates are given in Annexure – III.

A . For B.V.Sc. & A.H. / B.Sc. (Ag.) / B.Sc. (Hort.)/ B.F.Sc/B.Tech (FS&T)/B.Sc (CA & BM) Courses

Candidates should have passed or appeared for the final year of Intermediate Examination (10+2 pattern) or any examination recognised as equivalent thereto by the Board of Intermediate Education A.P., with any two/three of the subjects indicated against each course noted below:

a.	B.V.Sc. & A.H.	i. Physical Sciences ii. Biological or Natural Sciences iii. Vocational Courses in Veterinary Sciences
b.	B.Sc. (Ag.)	i. Physical Sciences ii. Biological or Natural Sciences iii. Agriculture iv. Vocational Course in Agriculture
c.	B.Sc. (Hort.)	Same as above.
d.	B.F.Sc.	i. Physical Sciences ii. Biological or Natural Sciences iii. Vocational Course in Fishery Sciences.
e.	B.Tech (FS&T)	i. Mathematics ii. Physical Sciences or i. Physical Sciences ii. Biological or Natural Sciences
f.	B.Sc (CA & BM)	i. Mathematics ii. Physical Sciences or i. Physical Sciences ii. Biological or Natural Sciences

Note: i) Irrespective of the subjects taken at the qualifying examination, candidates seeking admission to the above courses should appear for Biology, Physics and Chemistry in EAMCET-2007 (AM category).

ii) Candidates should have completed 17 yrs of age as on 31st December of the year of admission and an upper age limit of 22 yrs for all the candidates and 25 yrs in respect of SC/ST candidates as on 31st December of the year of admissions.

B. For MBBS/BDS Courses:

Candidates should have passed or appeared for the final year of the Intermediate Examination (10+2 pattern) with Physics, Chemistry and Biology as optionals which shall include a practical test in these subjects, OR any examination (10+2 pattern) with Physics, Chemistry and Biology including practical test in each of these subjects, recognised as equivalent to Intermediate by the Board of Intermediate Education, Hyderabad.

Candidates should have completed 17 yrs of age as on 31st December of the year of admission and an upper age limit of 22 yrs for all the candidates and 25 yrs in respect of SC/ST candidates as on 31st December of the year of admissions.

C. For B.Pharm Courses :

a) Candidates should have passed or appeared for the final year of the Intermediate Examination (10+2 pattern) with Physics, Chemistry and Biology optionals, conducted by the Board of Intermediate Education, Hyderabad, Andhra Pradesh or any other examination recognised by the Board of Intermediate Education as equivalent thereto.

b) Candidates should have completed 16 years of age as on 31st December of the year of admission. There is no upper age limit.

III. GENERAL INFORMATION / INSTRUCTIONS:

a. The Convener , EAMCET – 2007 reserves the right to reject the application of the candidate at any stage, if (i) the application is incomplete (ii) the candidate fails to satisfy the eligibility conditions, (iii) any false or incorrect information is furnished (iv) the entries in the application form are illegible (v) the application is received after the due date. No correspondence will be entertained in this regard. Any change whatsoever, including that of caste / community status or category, shall not be permitted to be made in the filled in application after receipt by the Convener.

b. The Convener is not responsible for non-receipt of application by the notified date and time for any reason whatsoever, including postal delay / loss in transit etc.

IV. MEDIUM OF ENTRANCE TEST:

The question paper will be in "English" and "Telugu". Candidates who have studied the qualifying examination in Urdu medium and wish to avail assistance for translating the questions into Urdu, will be allotted a test centre at Hyderabad only.

V. COST OF APPLICATION FORM AND REGISTRATION FEE:

No amount need to be paid along with the application except in the case of late submission.

VI. SAME CENTRE FOR CANDIDATES OF BOTH E & AM :

Candidates of AM – Category who are eligible and desirous of taking the test in Mathematics, Physics and Chemistry, for Engineering and Pharmacy (M.P.C) courses in addition to the test in AM Category, for Agriculture, Medical and Pharmacy Courses (Bi.P.C.) should send / submit both the applications (E & AM Category) together (if submitted by post or in person), so that the same centre can be allotted to them for both the tests. If this instruction is not followed, the candidate may be allotted different test centers for AM & E category test.

VII. REGIONAL CENTRES FOR ENTRANCE TEST AND SUBMISSION OF FILLED IN APPLICATION FORMS / COLLECTION OF HALL TICKETS.

Code No.	Centre	Name of the Regional Coordinator and address with Telephone No with STD Code	Venue for submission of filled in application and collection of Hall-tickets
A 01.	ADILABAD	**Dr.CH. Veerabhadram,** Principal Govt.Degree College for women, Adilabad – 504 001 **Ph.No. (O) 226370 (08732)**	Govt. Degree College for women, Adilabad
B 02.	ANANTAPUR	**Dr.K. Soundara Rajan,** Principal J.N.T.U. College of Engg., Anantapur-515002**. Ph.No. (O) 273013 (08554)**	J.N.T.U. College of Engg., Anantapur
C 03.	ELURU	**Dr.K.Mohan Rao,** Principal Sir. C.R.R. College of Engineering Eluru – 534007. **Ph. (0) 230840 (08812)**	Sir. C.R.R. College of Engineering, Eluru
D 04.	GUNTUR	**Dr.B. Raveendra Babu,** Vice - Principal RVR & JC College of Engineering City Centre, Besides Venkateswara Temple Main Road, SVN Colony, GUNTUR – 522 006. **Ph. No. (O) 2288280, (City Off) 2232505 (0863)**	RVR & JC College of Engineering, City Centre, Besides Venkateswara Temple Main Road, SVN Colony, GUNTUR – 522 006.
E 05.	HYDERABAD	**Dr.E.Saibaba Reddy,** Convener, EAMCET – 2007 SIT Building, Cellar portionJNT University, Kukatpally, Hyderabad – 500 085 **Ph.No. (O) 64543718 (040)**	Convener, EAMCET – 2007 Office, SIT Building, Cellar portion, JNT University, Kukatpally, Hyderabad - 500085.
F 06.	KADAPA	**Dr.E.L. Nagesh,** Principal Madina Engg. College, Near Airport, Kamalapuram Road, Kadapa – 516 003. **Ph.No. (O) 276820 (08562)**	Madina Engg. College, Near Airport, Kamalapuram Road, Kadapa
G 07.	KAKINADA	**Prof.K. Satya Prasad,** Principal, JNTU College of Engg., Kakinada – 533003. **Ph. No. (O) 3204646 (0884)**	JNTU College of Engg., Kakinada .
H 08.	KARIMNAGAR	**Sri B.Dakshina Murthy,** Principal Govt. Degree & PG College for Women Karimnagar - 505 001. **Ph.No. (O) 2243562 (0878)**	Govt. Degree & PG College for Women Karimnagar
I 09.	KHAMMAM	**Prof.P. Madhusudana Rao,** Principal University P.G.College (KU), Opp. By-pass Road, KHAMMAM – 507 002. **Ph.No. (O) 223815 (08742)**	University P.G.College (KU) Opp. By-pass Road Khammam
J 10.	KURNOOL	**Dr.P.Jayarami Reddy**, Principal GPR Engg. College, Kurnool – 518002. **Ph.No. (O) 270957 (08518)**	GPR Engg. College, Kurnool
K 11.	MAHABOOBNAGAR	**Dr. K. Sudhakar,** Principal Govt. Polytechnic Mahaboob nagar - 509 001. **Ph.No. (O) 275072 (08542)**	Govt.Polytechnic Mahaboob nagar
L 12.	NALGONDA	**Sri N. Krishna Prasad,** Principal NG Degree College NALGONDA – 508 001. **Ph.No. (O) 222453 (08682)**	NG Degree College Nalgonda
M 13.	NELLORE	**Sri V Raghavan,** Principal Govt. Polytechnic for Boys, Venkateswarapuram, Nellore - 524005. **Ph. No. (O) 250904 (08622)**	Govt. Polytechnic for Boys, Venkateswarapuram, Nellore .
N 14.	NIZAMABAD	**Prof.T Sreenivas,** Principal Vijay Rural Engg College Manik Bhandar, Nizamabad – 503003 **Ph.No. (O) 280157 (08462)**	Vijay Rural Engg College Manik Bhandar Nizamabad
O 15.	ONGOLE	**Sri B. Parameswara Rao,** Principal Govt. Polytechnic, Housing Board Colony, Ongole – 523001. **Ph. (O) 233046 (08592)**	Govt. Polytechnic Housing Board Colony, Ongole
P 16.	SRIKAKULAM	**Dr.K. Mythili** Govt. Degree College (Men) Srikakulam -532001. **Ph.No. (O) 222383 (08942)**	Govt. Degree College (Men) Srikakulam
Q 17.	TIRUPATI	**Prof.K.Ravindranath,** Principal S.V.U.College of Engg., Tirupati – 517502. **Ph. No. (O)2249740 (0877)**	S.V.U.College of Engg., Tirupati
R 18.	VIJAYAWADA	**Dr.K.R.K.Prasad,** Principal V.R.Siddhartha Engg. College, Kanur, Bandar Rd, Vijayawada – 520007. **Ph.No. (O) 2582333 (0866)**	V.R.Siddhartha Engg. College, Kanur, Bandar Rd, Vijayawada.
S 19.	VISAKHAPATNAM	**Prof. Ch. Ratnam,** Prof of Mech. Engg Dean of Exams (Autonomous), AU College of Engg., University Campus, Visakhapatnam - 530 003. **Ph.No. (O) 2754586 (0891)**	AU College of Engg., University campus, Visakhapatnam
T 20.	VIZIANAGARAM	**Prof. K.V. Lakshmipathi Raju,** Principal MVGR College of Engg., Chintalavalasa Vizianagaram Dt - 535 005. **Ph.No.(O) 241039 (08922)**	MVGR College of Engg., Chintalavalasa, Vizianagaram Dt
U 21.	WARANGAL	**Dr.P.Venugopal,** Principal Kakatiya Medical College Warangal – 506 004. **Ph. No. (O) 2446888 (0870)**	Kakatiya Medical College Warangal

The entrance test will be held at the above Regional Centres.

Note : a. The Convener reserves the right to add or delete some centres from the list of Regional Centres notified.
b. The Convener reserves the right to allot the candidates to any regional centre other than that opted by the candidates.
c. Candidate has to submit not more than one application either for 'E' or 'AM' category test. If any candidate submits more than one application for one category, the Convener reserves the right to reject all the applications or accept any one of them only.

VIII. SUBMISSION OF APPLICATION FOR EAMCET – 2007

There are two ways to submit the EAMCET 2007 application
1. Online submission and 2. Offline submission

A candidate may submit the application in either of the two ways. In any case, the candidate has to purchase the application, which contains a unique application number and a code. Candidates are advised to keep these numbers confidential, so that someone else does not misuse it. After purchasing the application form, the following procedure should be followed for submission of the same.

Open the application form and fill it carefully. Pay special attention to sign within the given box and paste the photo at the exact place as this application is processed by computer automatically. **In case an application is submitted in both ways, the details of the offline submission will prevail.**

Online Submission:

Application can be submitted Online from any place where a personal computer with a scanner and Internet facility is available by accessing the EAMCET website (http://www.eamcet2007.org). JNT University has made arrangement for online submission from its various affiliated colleges, as mentioned in website. This facility is available at free of cost.

Scan the marked portion of the application form in 150 DPI 8 bit color/ Grayscale JPG image and keep it ready before filling the online submission form.

After entering the details, attach the scanned image and submit the form. After verification, your data will be presented back so that the candidate can verify and either submit or cancel the data. If the data is submitted, the candidate is given a registration number and the data can be printed for future reference. The registration number should be used for any further correspondence till the hall ticket is issued.

If the form is submitted on-line, the duly filled application form should be handed over to the invigilator at the time of examination, if it is not submitted in person or by post.

For quick action and response, the candidates are encouraged to submit online on or before 08-03-2007 by 5-00 pm.

Offline:

a. The application for EAMCET-2007 should be completed in all respects before submission to the Convener. One **recently** taken **Colour** passport size (3.5 cm x 4.5 cm) photograph of the applicant, is to be affixed in the space provided for the purpose. **Only latest photograph should be affixed as this will be used for issuing "HALL - TICKET".**
b. The filled in application form to be submitted preferably in person at the Venue of The Regional Centre opted by the candidate and obtain the acknowledgement card with Registration No. or send by Registered Post to the **Convener, EAMCET-2007, J.N.T. University, SIT Building, Cellar Portion, Kukatpally, Hyderabad-500 085** so as to reach on or before 5.00 pm on 08-03-2007 without late fee. Candidates sending their application by post, should indicate Name and Code No. of the Regional Centre in the space provided on the envelope. Those who are submitting the application after **08.03.2007 must send a D.D. towards late fee in favour of the Convener, EAMCET-2007.** The details of D.D.should be mentioned in the space provided on the Top of envelope.
c. The candidates are advised to preserve the acknowledgement card. Quote the registration number for all future correspondence.
Both online and offline submission: The candidates are advised to quote only offline registration number for all future correspondence.
Enclosures: No Enclosures need to be submitted along with the application except acknowledgement card if submitted offline.

IX. Mere appearance and qualifying at EAMCET-2007 does not confer any right for admission into professional courses. Candidate has to fulfill the eligibility criteria laid down in the relevant G.O at the time of admission.

X. QUALIFYING MARKS FOR EAMCET – 2007

The qualifying percentage of marks in the EAMCET-2007 is 25% (40 out of a total 160). However, for candidates belonging to Scheduled Castes and Scheduled Tribes, no minimum qualifying mark is prescribed. But their admission will be limited to the extent of seats reserved for such categories (Vide G.O.Ms. No. 179, LEN&TE, dated 16.06.1986)

XI. EAMCET-2007 RESULTS

a. Evaluation : Every care will be taken to avoid errors in the evaluation, checking, scrutiny, tabulation and ranking.

b. Ranking :

i. Candidates shall be ranked in the order of merit in the EAMCET-2007 on the aggregate marks. In case of a tie, marks obtained in Biology, in case of further tie, marks obtained in Physics, shall be taken into account to decide the relative ranking.

In case of candidates getting equal marks in these subjects, they shall be bracketed for purpose of award of ranking, and at the time of admission, the total percentage of marks secured by the candidate in the qualifying examination shall be taken into consideration. On further tie, age shall be taken into consideration, the older candidate being given priority.

ii. Rank obtained in EAMCET-2007 is valid for admission to the courses mentioned in the application form, for the academic year 2007-2008 only.
iii. Rank card will be posted to the candidate's address as given in the application.
iv. Rank obtained with the benefit of relaxation of the minimum qualifying marks at EAMCET-2007 by any candidate claiming to belong to SC/ ST Category will be cancelled in case the claim is found to be invalid at the time of admission to any course of study in any participating Universities / Institutions.

XII. The candidates should preserve the Hall Ticket and Rank Card and produce them when called for verification. However a duplicate Rank card/Hall-ticket will be issued by the Convener on payment of Rs. 100/- each in the form of D.D on any nationalized bank payable at Hyderabad in favour of Convener, EAMCET - 2007.

XIII. Any malpractice in EAMCET-2007 will be dealt with as per rules in force vide G.O.Ms.No. 114, Edn/(IE) dt. 13th May 1997.

XIV. The answer scripts of EAMCET-2007 will be preserved for six m onths from the date of publication of results after which they shall be disposed off.

XV. In any litigation concerning EAMCET-2007 Test, Convener is the only person to sue and be sued .

XVI. Any litigation concerning EAMCET-2007 shall be subject to the jurisdiction of the A.P. High court, Hyderabad only.

XVII. DUPLICATE HALL TICKET

If the candidate fails to receive the Hall Ticket within two or three days before the date of examination, he/she has to contact the Regional Coordinator with the Registration number, to know the particulars of Hall Ticket number and Test Centre. Then the candidate along with an attested photograph and a D.D. for Rs. 20/-, in favour of Convener, EAMCET - 2007 or cash, shall contact Chief Superintendent of the Test Centre concerned, to get duplicate Hall Ticket.

or

The candidate may also download the hall ticket from website.

The following proforma I,II and III are to be submitted at the time of councelling to claim nativity, community and local status.

PROFORMA – I

REVISED PROFORMA AS PER G.O.Ms.No.58, SOCIAL WELFARE (J) DEPT. DATED 12.05.1997

ANDHRA PRADESH GAZETTE EXTRAORDINARY PART-I

Serial No. **FORM III**

S.C. District Code :

S.T. Emblem Mandal Code :

B.C. Village Code :

Certificate No.:

COMMUNITY, NATIVITY AND DATE OF BIRTH CERTIFICATE

(Integrated Community Certificate)

1. This is to certify that Sri / Smt./Kum _____
   Son/Daughter of Sri _____
   of Village/ Town _____ Mandal
   _____ District of the state of Andhra Pradesh belongs to _____ Community which is recognized as SC/ST/BC under :
   The Constitution (Scheduled Castes) Order, 1950
   The Constitution (Scheduled Tribes) Order, 1950
   G.O.Ms.No.1793, Education, dated 25.09.1970 as amended from time to time BCs, SCs, STs list (Modification) Order 1956, SCs and STs (Amendment) Act, 1976.
2. It is certified that Sri / Smt. / Kum. _____
   is a native of _____ District of Andhra Pradesh.
3. It is certified that the place of birth of Sri / Smt. / Kum. _____ Village / Town _____ Mandal _____ District of Andhra Pradesh.
4. It is certified that the date of birth of Sri / Smt. / Kum. _____ is Day _____ Month _____ Year _____ (in words _____) as per the declaration given by his / her father / mother / guardian and as entered in the School records where he / she studied.

Signature :
Date :
(Seal) **Name in Capital letters :**
Designation :

Explanatory Note :

1) While mentioning the community, the competent Authority must mention the sub-caste (in case of SCs) and Sub-Tribe or Sub-Group (in case of STs) as listed out in the SCs and STs (Amendment) Act, 1976.

PROFORMA – II

RESIDENCE CERTIFICATE IN SUPPORT OF 12 OF ADMISSION APPLICATION

1. It is hereby certified:
   a. That Mr / Kum_____ son / daughter of Sri / Smt. _____ a candidate for admission to the _____
   course appeared for the first time for the _____examination (being the minimum qualifying examination for admission to the course mentioned above) in _____(month) _____ (year).
   b. That in the 7 years, immediately preceding the commencement of the aforesaid examination he / she has resided in the following place / places falling within the area in respect of the AU/OU/SVU region (Tick appropriate one).

S.No.	Period	Village	Manda	District
1				
2				
3				
4				
5				
6				
7				

2. The above candidate is, therefore, a local candidate in relation to the area specified in Paragraph 3(1)(2)(3) of the Andhra Pradesh Educational Institution (Regulation of Admissions) Order 1974 as amended.

Officer of the Revenue Department
(Issued by the competent
authority of Revenue Dept.)

Date: (OFFICE SEAL)

PROFORMA – III (AM Category)
CERTIFICATES IN SUPPORT OF NON-LOCAL STATUS FOR AM CATEGORY

(A) Certificate to be furnished when the candidate has resided in the state for a period of 10 years
(Read Instructions under 3(a) of Annexure (III) of Instruction Booklet of admission)

This is to certify that Mr./ Kum. _____
Son / Daughter of Sri. / Smt. _____,
a candidate for (a) B.V.Sc. & A.H. / B.Sc. (Ag.)/ B.Sc.(Hort.) / B.Tech (Food Science and Tech) (Bi.P.C) /B.Sc (Commercial Agri. & Business Mgt) (Bi.P.C)/ B.F.Sc., (b) MBBS / BDS / BAMS / BHMS / BNYS Courses (c) B.Pharm (Bi.P.C.) entry of 2007-2008 is a resident of _____ (Place) in _____(District) of Andhra Pradesh for a total period of 10 years from the year _____to _____ excluding the periods of study outside the state.

Place:
Date:

(Issued by the competent
authority of Revenue Dept.)

Office Seal:

(B) Certificate to be furnished when either of the parents of the candidate has resided in the state for a period of 10 years
(Read Instructions under 3(b) of Annexure (III) of Instruction Booklet of admission)

This is to certify that Sri/Smt. _____
Father / Mother / of _____
a candidate for (a) B.V.Sc. & A.H. / B.Sc. (Ag.)/ B.Sc.(Hort.) / B.Tech (Food Science and Tech) (Bi.P.C) /B.Sc (Commercial Agri. & Business Mgt) (Bi.P.C)/ B.F.Sc., (b) MBBS / BDS / BAMS / BHMS / BNYS Courses (c) B.Pharm (Bi.P.C.) entry of 2007-2008, is a resident of _____ (Place) in _____(District) of Andhra Pradesh for a total period of 10 years from the year _____to _____ excluding the period of stay outside the state.

Place:
Date:

(Issued by the competent
authority of Revenue Dept.)

Office Seal:

(C) Certificate to be furnished when the parent / spouse is an employee of the State or Central Government
or Quasi-Government Organization.
(Read Instructions under 3(c) and 3(d) of Annexure (III) of Instruction Booklet of admission)

This is to certify that Sri / Smt. _____
Father / mother / spouse of _____
a candidate for (a) B.V.Sc. & A.H. / B.Sc. (Ag.)/ B.Sc.(Hort.) / B.Tech (Food Science and Tech) (Bi.P.C)/B.Sc (Commercial Agri. & Business Mgt) (Bi.P.C)/ B.F.Sc., (b) MBBS / BDS / BAMS / BHMS / BNYS Courses (c) B.Pharm (Bi.P.C.) entry of 2007-2008, is presently employed in Andhra Pradesh State in the Organization _____ from _____ till to-date. This Organization is a State / Central / Quasi Government Organization in the State of Andhra Pradesh.

Place:
Date :

Signature of issuing authority
Designation

Office Seal:

ANNEXURE - I

EAMCET-2007 SYLLABUS

NOTE

- In accordance to G.O.Ms.No: 16 Edn., (EC) Dept., Dt: 25th Feb' 04, EAMCET Committee has specified the syllabus of EAMCET-2007 as given hereunder.
- The syllabus is in tune with the revised syllabus introduced for Intermediate course with effect from the academic year 2005 - 2006 and is designed at the level of Intermediate Course and equivalent to (10+2) scheme of Examination conducted by Board of Intermediate Education, AP.
- The syllabus is designed to indicate the scope of subjects included for EAMCET. The topics mentioned therein are not to be regarded as exhaustive. Questions may be asked in EAMCET-2007 to test the students knowledge and Intelligent understanding of the subject.
- The syllabus is applicable to students of both the current and previous batches of Intermediate Course, who are desiring to appear for EAMCET-2007.

SYLLABUS – BOTANY

I) INTRODUCTION:
a. Origin and development of Botany
b. Branches of Botany: Morphology, Cytology, Embryology, Palynology, Taxonomy, physiology, Ecology, Palaeobotany, Genetics, Phytogeography, Phycology, Mycology, Lichenology, Bryology, Pteriodology, Microbiology, Bacteriology, Virology
c. Botanical Institutes of India: BSI, NBRI, CIMAP, IARI, ICRISAT & FRI
d. Eminent Botanists of India: Prof. M.O.P. Iyengar, Dr. M.S. Swminathan, Prof. Birbal Sahni, Prof. K.C. Mehta, Prof. P. Maheshwari

II) MORPHOLOGY:
a) Vegetative:
i) Root: Types of roots, Modification of roots: Epiphytic roots, Photosynthetic roots, Respiratory roots, Parasitic roots & Storage roots.
ii) Stem: Modifications of stem: Aerial: Tendril, Thron, Hook, Phylloclade, Tuberous stem and Bulbil; Sub-aerial: Runner, Stolon, Sucker & Offset, Underground: Rhizome, Corm, Stem tuber & Bulb
iii) Leaf: Parts of Leaf, Types of leaves, venation, Phyllotaxy, Leaf modifications: - leaf tendrils, spines, scale leaves, phyllode, reproductive & trap leaves (Mechanism of trapping in Nepenthes only). Heterophylly
b) Reproductive:
i) Inflorescence: Types of Inflorescence - Racemose, Cymose, Special Types
ii) Flower: Structure of flower: Sex distribution, symmetry of flower, position of gynoecium.
Detailed description of flower: Perianth, aestivation, Androecium, Cohesion and Adhesion, Gynoecium, placentation.

III) REPRODUCTION IN ANGIOSPERMS:
a. Microsporogenesis and development of male gametophyte
b. Ovule, megasporogenesis and development and structure of female gametophyte
c. Pollination: Types of pollination, self and cross-pollination, contrivances for cross –pollination and self – pollination
d. Fertilization
e. Post fertilization changes
f. Fruits: Types of fruits, False and true, simple fruits (fleshy and dry), Aggregate and Multiple fruits

IV) PLANT TAXONOMY:
Introduction: Principles of plant Taxonomy - Identification, Nomenclature and classification: Brief account of Bentham & Hooker's system
Families:
a) Malvaceae b) Fabaceae c) Asteraceae d) Solanaceae and e) Liliaceae

V) ECONOMIC BOTANY:
Botanical name, family, morphology of useful parts and economic importance of the following: Cereals – Paddy; Millets – Jowar; Pulses – Redgram; Oilseeds - Groundnut; Fibres – Cotton; Fruit yielding – Mango; Medicinal plants – Neem

VI) CELL BIOLOGY:
Introduction, Ultra structure of plant cell (Eukaryotic cell): Structure of cell wall and cell membrane, Protoplasm.
Structure and functions of cell organelles (Plastids, mitochondria, endoplasmic reticulum, ribosomes, golgi complex, lysosomes, peroxisomes and glyoxysomes), vacuoles. Nucleus, structure of chromosomes, nucleic acids
Cell division: Mitosis and Meiosis

VII) INTERNAL ORGANIZATION OF PLANTS:
Meristematic and Permanent tissues – Types and functions of tissues.
Primary structure of root, stem and leaf of monocot and dicot plants
Secondary growth in dicot stem

VIII) PLANT ECOLOGY:
Plant communities : Hydrophytes and Xerophytes; Ecological adaptations (Morphological & Anatomical) of Hydrophytes and Xerophytes.

IX. PLANT KINGDOM
Introduction and classification of Plant Kingdom in brief.
Study of the structure and life history of the following forms: Spirogyra, Rhizopus, Funaria, Pteris and Cycas.

X. MICROBIOLOGY
Introduction and importance of microbiology.
Bacteria : Introduction, structure, nutrition, reproduction and economic importance.
Viruses: Introduction, structure of TMV and Bacteriophage, replication, transmission, symptoms of plant viral diseases and their control measures.

XI. PLANT PATHOLOGY
Introduction to plant pathology
Symptoms, causative organism and control measures of the following diseases:
Blast of paddy
Red rot of sugarcane
Grain (covered) smut of Sorghum
Citrus canker

XII. PLANTS AND HUMAN WELFARE:
Crop improvement
- Aims of Crop improvement.
- **Methods of crop improvements:** Definition, method, merits, limitations and achievements of Introduction, Selection (Mass, pureline, clonal), Hybridization and Hybrid vigour (Heterosis); Mutations (Spontaneous and induced) and Polyploidy (Euploidy and Aneuploidy) breeding and their applications in Crop improvement.

Biotechnology:
Definition, Scope and application of Biotechnology, Genetic Engineering - Recombinant DNA Technology, Gene cloning; Transgenic plants; Single cell protein.

Tissue Culture: Process of tissue culture; Anther and Embryo cultures; Applications of plant tissue culture.

Mushroom Cultivation: Morphology and types of mushrooms; Food value and uses; Method of cultivation of white button mushroom.

XIII. PLANT PHYSIOLOGY :

a. SOIL AND WATER RELATIONS OF PLANTS:
i. Soil: Definition, soil profile and components of soil.
ii. Diffusion, Imbibition, Osmosis, Plasmolysis, water potential and its components, Absorption of water.
iii. Ascent of Sap: Definition, Cohesion – Tension theory
iv. Transpiration : Definition and types of transpiration, structure of stomata, mechanism of stomatal movement, factors, significance. Anti-transpirants.
v. Mineral nutrition : Definition, list of macro and micronutrients, ion absorption (carrier concept only), Bio-fertilizers.

b. METABOLISM :
i. **Enzymes :** Definition, Properties and nomenclature, major groups of Enzymes (hydrolases and desmolases)
ii. **Photosynthesis:** Definition, photosynthetic pigments (chlorophylls, carotenoids and phycobilins); Hills reaction, Emerson enhancement effect, PSI and PSII, Calvin cycle (C_3 – cycle), Hatch and Slack pathway (C_4 – cycle); Factors influencing photosynthesis – Blackman's law of limiting factors.
iii. Respiration: Types of respiration; Mechanism of aerobic respiration : Glycolysis, Krebs cycle, Electron transport system: Mechanism of anaerobic respiration, Alcoholic fermentation; Respiratory quotient (R.Q).
iv. Nitrogen metabolism: Introduction, Biological nitrogen fixation (Symbiotic, Non-symbiotic); Biosynthesis of proteins (Genetic code, transcription and translation).
v. Plant growth regulators: Auxins, Gibberellins, Cytokinins, Abscisic acid and Ethylene and their physiological functions and applications in agriculture and horticulture;

SUBJECT: ZOOLOGY

UNIT – I : ZOOLOGY, THE BASICS:
a. Nature and Scope of Zoology
b. Relation between Zoology and Other Sciences
c. Basic principles of classification
i. Need for classification
ii. Five Kingdom classification, viz., Monera, Protista, Plantae, Fungi and Animalia.
iii. Concept of species – levels of classification – Binomial nomenclature

UNIT – II : GENERAL CHARACTERS AND CLASSIFICATION OF INVERTEBRATE PHYLA UPTO THE LEVEL OF CLASSES WITH EXAMPLES
a. Phylum : Porifera
b. Phylum : Coelenterata (Cnidaria)
c. Phylum : Platyhelminthes
d. Phylum : Nemathelminthes
e. Phylum : Annelida
f. Phylum : Arthropoda
g. Phylum : Mollusca
h. Phylum : Echinodermata

UNIT - III : ANIMAL ORGANISATION:
a. Multicellularity: Diploblastic and Triploblastic condition
b. Symmetry – Types and characteristic features of each symmetry, giving an example for each type from the representative Phyla – Asymmetry, Radial Symmetry, Biradial symmetry and Bilateral symmetry
c. Coelom:
i. Formation of coelom
ii. Schizocoelic and Enterocoelic coelom
iii. Definition of Acoelom, Pseudo-coelom & Coelom – Examples from major Phyla.
d. Animal tissues

UNIT – IV : LOCOMOTION AND REPRODUCTION IN PROTOZOA:
a. Types and Structure of locomotary organelles – Pseudopodia, Cilia & flagellae giving examples.
b. Amoeboid movement (Pseudopodial movement) – Sol-gel theory only
c. Ciliary and flagellar movements – Synchronal and Metachronal movements (eg. Paramoecium) Effective stroke and recovery stroke (eg. Euglena)
d. Types of Reproduction:
I) Asexual reproduction and methods
i. Binary Fission – (transverse and longitudinal) with typical examples.
ii. Multiple Fission
II) Sexual reproduction – conjugation as exemplified by vorticella – its significance

UNIT – V : ANIMAL ASSOCIATIONS:
a. Definition and 1 or 2 examples of the following associations
i) Mutualism / Symbiosis **&** Commensalism
ii) Parasitism

iii) Predation

b. Structure and life cycle of the following parasites
   i) Entamoeba histolytica
   ii) Plasmodium vivax
   iii) Taenia solium
   iv) Wuchereria bancrofti

UNIT – VI : PHYLUM : Annelida – Pheritima – Type study in detail

UNIT – VII : PHYLUM – ARTHROPODA:

a. Cockroach – Periplaneta americana – External characters, digestive, respiratory and nervous system sense organs only.
b. Insect mouth parts of the following types:
   i. Biting chewing type, eg. Cockroach
   ii. Piercing and sucking type, eg. Mosquito
   iii. Sponging and sucking type, eg. Housefly
   iv. Siphoning type, eg. Butterfly
c. Economic importance of insects:
   i. Useful insects, viz., Honey bee, Lac insect, Silk worm - their produce and general features.
   ii. Harmful insects viz., Bed bug, Head Louse. Mosquito and Housefly – their harmful effects and diseases spread by them.

UNIT – VIII : MAN AND BIOSPHERE:

a. Elementary aspects of the following:
   i. Abiotic factors – Light, temperature and water – their effects on organisms.
   ii. Biotic Factors – producers, consumers and decomposers
   iii. Lake Ecosystem – Littoral Zone, Limnetic Zone and profundal zone – Ecological pyramids and energy flow
   iv. Population ecology : Population density, growth, age distribution and population regulation.

b. Environmental Pollution:
   i. Air Pollution – Primary and Secondary Pollutants – Sulphur dioxide, Nitrous oxide, Particulates, aerosols, carbon monoxide, Co_2, Acid Rain, Ozone Depletion and noise pollution
   ii. Water pollution – pollutants – pesticide, industrial effluents, sewage, heavy metals, Fluorine, radio – active substances
   iii. Soil pollution – Fertilizers, pesticides & Solid waste
   iv. Preventive measures of Environmental pollution
   v. Wild life conservation

UNIT IX : PHYLUM : CHORDATA:

a. General characters and out line classification of Chordata upto classes with typical examples.
b. i) Pisces : Distinctive features of cartilaginous and Bony fishes with typical Examples
   ii) Amphibia: Distinctive features of Urodela, Anura and Apoda with Typical Examples.
c. i) Reptilia: Distinctive characters of Squamata, Rhynchocephalia, Crocodilia and Chelonia with typical Examples.
   ii) Identification of Poisonous and Non-Poisonous Snakes, Poison apparatus, Toxicity of snake venom and treatment of snake bite including first aid.
   iii) Aves: Distincive features of Carinatae and Ratitae with typical examples.
   iv) Mammalia: Distinctive features of Prototheria, Metatheria and Eutheria with typical examples .

UNIT X: FUNCTIONAL ANATOMY OF RABBIT – DIGESTIVE RESPIRATORY AND CIRCULATORY SYSTEMS:

a. Digestive System of Rabbit
Nutrition & Digestion
   i. Nutrition – Role of Vitamins and Minerals in nutrition.
   ii. Digestion: The sequence of digestion and absorption
b. Respiratory system of Rabbit – Structure mechanism of Respiration and Transport of respiratory gases.
c. Circulatory system of Rabbit
   i) Structure of Heart, Arterial and venous systems
   ii) Working of the heart of Rabbit
   iii) Coagulation of blood

UNIT XI : FUNCTIONAL ANATOMY OF RABBIT – EXCRETORY, MUSCULO-SKELETAL, REPRODUCTIVE SYSTEMS, NERVOUS AND ENDOCRINE SYSTEMS.

a. Excretory system of Rabbit
   i) Structure and function of Nephron.
   ii) Urine formation and its composition
b. Musculo – Skeletal System:
   i) Ultra structure and contraction of muscle sliding filament theory and Bio-Chemical changes in muscle contraction
   ii) Types of Joints
c. Reproductive system of Rabbit –
   i) Anatomy of male and female reproductive systems
   ii) Fertilization
   iii) Development of Rabbit upto gastrulation, gestation.
   iv) Placenta
d. Central Peripheral and autonomous Nervous systems in brief . Name and Roman nomenclature of cranial nerves , types – motor, sensory & mixed nerves – Production and propagation of nerve impulse, reflex action
e. Endocrine system – Endocrine glands [Pituitary, thyroid, para-thyroid, adrenal (medulla and cortex), Pancreas, Gastro - intestinal, Ovary & Testes] Pineal gland, Qthymus and the role of their hormones .

UNIT XII: GENETICS:

a. Mendel's Laws, Concepts of test cross, Monohybrid cross, Dihybrid cross, Law of incomplete dominance, Co-dominance, Linkage.
b. Multiple alleles and Blood groups, Rh Antigens – their significance in pregnancy and transfusion.
c. Sex determination: Sex chromosomes, xx-xo, zo-zz, xx-xy,zz-zw methods, Gene balance theory, sex determination and sexual differentiation in human beings (Turner's syndrome, Klinefelter syndrome, Barr bodies), Haplo-diploidy in Honeybees, Hormonal control of sex.
d. Sex-linked Inheritance: Sex linkage in Drosophila, Holandric genes, x-linked recessive characters, x-y linked characters, sex-limited and sex-influenced inheritance.
e. Gene expression and regulation, Functions of the genes, operon concept, concepts of gene action
f. Basic concepts of animal inbreeding, out breeding cloning and transgenic animals.

UNIT XIII: ORGANIC EVOLUTION:

a. i) Origin of life
   ii) Theories of Organic evolution – Lamarck, Darwin, Devries
b. Evidence of organic evolution
Morphology and comparative anatomy, embryology, physiology and biochemistry, palaeontological, zoo-geographical
C. Modern Concepts – Hardy Weinberg equilibrium, Natural selection – Neo Darwinism, speciation –genetic drift

UNIT XIV: APPLIED ZOOLOGY:

a i) Aqua culture
   a) Animals of Aqua cultural importance
   b) fisheries
   c) fish culture and rearing methods
   ii) Poultry
   Poultry farming methods, Layers and Broilers
   Poultry diseases (Bacterial, Viral and fungal)
b. i) Immunology – Types of immunity, Cells and organs of immune systems, soluble mediators of immunity, Mechanism of Humeral and cell mediated immunities, immunological disorders (AIDS Hepatitis)
   ii) Hypersensitivity
c. Biotechnology
i) Recombinant DNA technology

ii) Industrial use of microorganisms in Recombinant DNA technology
i) Cell cycle regulation – cancer biology (cell cycle and its regulation, types of cancers), causative agents of cancer
ii) Stem cells.

SUBJECT – PHYSICS

I. UNITS AND DIMENSIONS :
Necessity of Measurements for quantitative study – choosing units, fundamental units in the S.I. system and their definitions. Supplementary and derived Units – Multiples and sub-multiples and rules for writing units in S.I. System. Dimensions of Physical quantities – Applications of dimensional Analysis with examples – Limitations of dimensional analysis.

II. ELEMENTS OF VECTORS :
Classification of physical quantities as vectors and scalars Geometrical representation of vectors - Addition and subtraction of vectors. Laws of addition of vectors – Equal and null vectors. Unit vectors – Unit vectors in Cartesian co-ordinate system – position vector and its magnitude. Parallelogram law of vectors – Expression for the resultant vector. Triangle law and polygon law of vectors – concept of relative velocity- application to relative motion of a boat in a river. Multiplication of a vector with a scalar – Scalar product with examples of work and energy – Vector product with examples of torque and angular momentum – Vector and Scalar product of unit vectors.

III. KINEMATICS AND DYNAMICS :
Concept of acceleration due to gravity - Equations of motion of freely falling body – vertically projected body from ground and tower – Projectiles with examples – Oblique projection from ground and horizontal projection from the top of tower – Path of projectile. Maximum height, time of flight and range. Concept of resultant force – Apparent weight in lift – Impulse – Law of conservation of linear momentum – Work –Power – Energy - Definitions and units – Expressions for P.E. & K.E – Work – Energy theorem – Law of conservation of energy – Examples – Vertically projected and freely falling bodies.

IV. COLLISIONS AND CENTER OF MASS :
Collision of two bodies in one dimension - Elastic and in-elastic collisions – One body at rest - two bodies moving in the same and opposite directions – Co-efficient of restitution.
Definition of center of mass with examples – Difference between Center of Mass and Center of gravity – Co-ordinates of center of mass – Velocity and acceleration of centre of mass– Characteristics of center of mass - Explosion.

V. FRICTION :
Causes of friction – Static, Kinetic and rolling frictions – Angle of friction – Laws of friction – Lubricants – Motion of a body on the rough horizontal plane - Pushing and pulling of lawn roller –Expression for acceleration of a body on smooth and rough inclined planes (without rolling).

VI. ROTARY MOTION :
Concepts of torque and couple – Relation between angular momentum and torque – Moment of inertia – Parallel and perpendicular axes theorems – Expressions for M.I.of a thin rod, uniform disc, rectangular lamina, solid sphere and hollow sphere, circular ring and solid cylinder and hollow cylinder- Law of conservation of angular momentum with examples – Motion in vertical circle.

VII. GRAVITATION
Basic forces in nature – Nature of gravity – Limitations of Newton's third Law – Universal law of gravitation - Black Hole. Idea of inertial and non-inertial frames – Inertial and gravitational masses – Escape velocity, orbital velocity and relation between them – Geo stationary Satellites and their uses.

VIII. SIMPLE HARMONIC MOTION:
Definitions and examples – Expressions for displacement, velocity, acceleration, period and frequency – Expressions for the period of a simple pendulum and loaded spring – force constant , Expressions for the KE and PE of a body in SHM –Law of conservation of Energy in the case of simple pendulum.

IX. ELASTICITY :
Elasticity & Plasticity – Stress and Strain - Hooke's Law, Moduli of elasticity (Y, n, K) – Poission's ratio – Behaviour of wire under gradually increasing load – Elastic fatigue, strain Energy – Experimental determination of Y- Searles's apparatus.

X. SURFACE TENSION
Surface Tension Definition and Examples – Molecular Phenomenon – Angle of contact – Capillarity with examples in nature – Experimental Determination of S.T. by capillary rise method with necessary theory. Variation of S.T. with temperature – Expression for excess pressure inside a liquid drop and soap bubble.

XI. VISCOSITY
Explanation – Statement of Poisuille's expression – Variation of coefficient of viscosity with temperature – Streamline flow – Stokes formula – terminal velocity – Principle of buoyancy – Pressure in a fluid – Bernoulli's theorem – application to aerodynamic lift and motion of spinning ball.

XII. THERMAL EXPANSION OF MATERIALS
Vibrations of atoms in a solid –Potential Energy Curve – anharmonicity of vibrations – Explanation of thermal expansion – Difference in á values (of solids) of different materials. The coefficients of real and apparent expansion of liquids and the derivation of the relationship between them- Variation of density of liquids with temperature. Determination of coefficient of apparent expansion of liquid by specific gravity bottle method.
Volume and pressure coefficients of gases – their relationship – Experimental determination of the two co-efficients by Regnault's and Jolley's bulb apparatus – Absolute Zero – Kelvin Scale of Temperature- Boyle's law and Charle's law- Ideal gas equation – significance of universal gas constant.

XIII. THERMO DYNAMICS:
Statement and explanation of thermodynamics - Definition of Calorie, thermal capacity, specific heat and latent heat- Experimental determination of specific heat and latent heat – Law of mixtures-Joule's law and mechanical equivalent of heat (J). Three phases of matter & triple point of water. Definitions of specific heats of gases (C_p & C_v) – Isothermal and adiabatic processes- Relationships between P,V, & T – external work done by an ideal gas during expansion – Internal energy – Statements and explanation of Zeroeth, first and second laws of Thermodynamics – Relation of C_p,C_v and R (without using Maxwell's Equations)

XIV. TRANSMISSION OF HEAT
Conduction of Heat – Coefficient of thermal conductivity – Convection of Heat- Nature and properties of Thermal Radiation – Prevost's Theory of heat exchange- Emissive and absorptive power of bodies- Black body radiation – Kirchoff's laws and its application – Stefan's law, Newton's law of cooling.

XV. SOUND
Characteristics of a sound note – Formation of stationary Waves in stretched strings – Laws of vibrating strings – Experimental verification by Sonometer – Beats – Definition and explanation – Doppler Effect – Formula for apparent frequency in specific cases – Application and limitations of Doppler Effect – Echoes - Absorption of sound Waves – Reverberation – Fundamentals of Building acoustics – Statement of Sabine's formula

XVI. RAY OPTICS AND OPTICAL INSTRUMENTS:
Nature of Light – Newton's corpuscular theory – Huygen's wave theory – Electromagnetic wave theory, Properties of Electromagnetic waves – Quantum theory (Elementary ideas only) – Critical angle – Total internal reflection – Application to optical fibers. Lens Maker's formula 1/f = (ì-1) ($1/R_1 + 1/R_2$) – Defects of images – Spherical and chromatic aberrations and their elimination (Qualitative treatment) – Construction of Ramsden's and Huygen's eyepieces. - Dispersion of light – Dispersive Power – Pure and impure spectra conditions for obtaining pure spectrum.
Different kinds of spectra – Emission spectra-line, band and continuous spectra. Absorption spectra – significance of emission and absorption spectra. Fraunhoffer lines and their significance.

XVII. PHYSICAL OPTICS :
Interference – Coherent sources – Young's double slit experiment – Applications – Diffraction – phenomenon of diffraction – Fresnel and Fraunhoffer Diffraction – Applications – Polarisation – concepts of polarization – production of plane polarised light by reflection and refraction- double refraction (Polaroids).

XVIII. MAGNETISM :
Coulomb's inverse square law – Couple acting on a bar magnet placed in a uniform magnetic field – Magnetic moment of a magnet – Expression for magnetic induction due to a bar magnet on axial and Equatorial lines – Superposition of magnet fields – Tangent Law – Deflection magnetometer – Comparison of magnetic moments in Tan A and Tan B positions by equal distance method and null method – Verification of inverse square law: vibration Magnetometer – Experimental determination of M and B_H

XIX. ELECTROSTATICS :
Coulomb's Law – permeativity – concept of electric filed - Electric lines of force – Force on a charge in an electric filed (F=Eq) – Electric potential – Potential due to point charge – potential energy of a point charge in a Uniform electric filed – electron volt – relation between E and V (E = V/d).
Capacitance – Dielectric constant – Parallel plate capacitor – formula for capacitance – dielectric materials (Elementary treatment) – effect of di-electric on capacity (Expressions only) – formula for resultant capacitance, when capacitors are connected in series and parallel – Energy stored in a capacitor – effect of di-electric on the energy – types of capacitors and their uses.

XX. CURRENT ELECTRICITY :
Ohm's Law – Ohmic and NonOhmic resistances – specific resistance – conductance – temperature dependence of resistivity – thermistor – e.m.f. of a cell – internal resistance and back e.m.f. - Kirchoff's Laws – statement and explanation – application to Wheatstone's bridge for its balance conditions- metre bridge – principle of

potentiometer – Comparison of e.m.f of cells – determination of internal resistance of a primary cell – series and parallel combination of cells.

XXI. THERMOELECTRICITY :
Seebeck effect – Peltier and Thomson effects and their coefficients – variation of thermo e.m.f. with temperature – Neutral and inversion temperatures – application of thermo couples.

XXII. ELECTROMAGNETICS :
Oersted's experiment – Biot-savart Law – Ampere Law – Magnetic field near a long straight wire and at the center of a circular coil carrying current (expressions only) – Tangent Galvanometer principle and working – force on a moving charge in a magnetic field – f = q (V x B) – force on a current carrying conductor in a magnetic field – force between two straight parallel conductors carrying current – definition of ampere – Fleming's left hand rule-force and torque on current loop in a magnetic field – construction and working of a moving coil galvanometer – shunt and its uses – conversion of moving coil galvanometer into ammeter and voltmeter – comparison of M.C.G with T.G.
Electromagnetic induction – Magnetic flux and induced emf- Faraday and Lenz's Laws – Fleming's right hand rule – self and mutual inductance – Henry – principle of transformer (Elementary ideas).
a.c. current circuits – introduction – instantaneous, maximum and rms values of alternating current (a.c.)– growth and decay of charge in a capacitor – A.C. circuits - L.C, C.R and L.C.R circuits.

XXIII. ATOMIC PHYSICS :
Discovery of electron – e/m of electron by Thomson's method – charge of an electron by Millikan's Oil drop method (Principle only) - Photoelectric effect-laws of photo electric emission – Einstein's Photoelectric equation and its experimental verification by Millikan's method – photoelectric cells and their uses.
X-ray spectra – Mosley's law and its importance – Compton effect –dual nature of matter – DeBroglie's hypothesis (concepts only).

XXIV. NUCLEAR PHYSICS :
Composition of nucleus – nuclear forces – mass defect and binding energy (Explanations with examples) – Artificial transmutation of elements - Discovery of neutron – nuclear fission – chain reaction – Principle and working of a nuclear reactor – Radio Isotopes and their uses – Nuclear fusion – energy of the sun and the stars (Carbon – Nitrogen cycle and Proton – Proton cycle) – elementary particles.

XXV. SEMI-CONDUCTOR DEVICES :
Junction diode – depletion layer – barrier potential – forward and reverse bias – current – voltage characteristics – junction diode as half wave and full wave rectifiers – Zener diode as Voltage regulator.
Transistors - pnp and npn transistors – Transistor Characteristics – Transistor amplifier (Common emitter).

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SUBJECT: CHEMISTRY

I. ATOMIC STRUCTURE:
Electromagnetic Radiation: Wave nature – Wave Characteristics: Wave length – frequency – Wave number – units to express these quantities – relationship between them. Numerical problems
Photon concept – Planks quantum theory, Black Body radiation, Photo Electric Effect, Emission, absorption, line and band spectra
Atomic Spectrum of Hydrogen – different regions of the spectrum – wave number of the spectral lines in these regions (Rydberg's equation),. Lyman, Balmer , Paschen , Bracket and pfund series- Numerical Problems.
Atomic Models : Rutherford's model, merits and demerits
Bohr's Model: Postulates – formulation of the model - Expressions for the energy and radius of the Hydrogen Atomic orbitals – limitations – Numerical problems. Zeemen, Stark effects – Sommerfield's modifications.
Quantum Numbers: Principal azimuthal Magnetic and Spin Quantum Numbers. Significance – writing quantum numbers for differentiating electrons in atoms – Pauli's exclusion principle.
Wave nature of electron: De-Broglie wave equation – Heisenberg's uncertainty principle – Numerical Problems. Schroedinger's equation (Cartesian coordinates equation only) – Explanation of terms present in it.
Orbitals: Shapes of s,p,d orbitals – orbitals energy sequence – aufbau principle – Hund's rule. Electronic configuration of elements (from atomic no: 1 to 30 by nl^x method)
Stability and magnetic behaviour of atoms based on concepts of electronic configuration.

II. NUCLEAR CHEMISTRY:
Nuclear particles: (Protons, Neutrons) – isotopes, isobars, isotones and Isodiapheres.
Nucleus: Relative dimensions of atom and nucleus – nuclear mass defect – mass –energy relation – binding energy – n/p ratio – magic numbers – Numerical Problems. Nuclear stability and factors effecting it.
Nuclear reactions: Writing nuclear reactions in the shortest form of (M(a,b)M') notation, balancing – typical examples of nuclear reactions – nuclear fusion (proton) reactions – nuclear fission (uranium – 235) – Differences between nuclear and Chemical reactions.
Radioactivity: Units of radioactivity (Curie, Rutherford and Bacquerel) - natural and artificial radioactivity – disintegration series – Group displacement law.
Radioactive disintegration: Rate equation (no derivation) – decay constant – half-life period – numerical problems on radioactive disintegrations – Radioactive isotopes (Co^{60}, P^{32}, Na^{24}, C^{14}, I^{131}) and their applications

III. PERIODIC CLASSIFICATION OF ELEMENTS:
Periodic Laws and Periodic Table: Periodic laws based on atomic number and electron configuration - Structure of the long form of the periodic table – s,p,d,f blocks – outer electronic configuration of elements of s,p,d and f blocks.
Periodic trends: Trends down the group and across the period in respect of atomic size, ionic radius, Vanderwalls radius and covalent radius, Oxidation State, ionization potential, electron affinity and electro negativity, metalic and non-metalic nature, electro positivity in Groups and Periods – reasons for the trends. Nature of oxides.

IV. CHEMICAL BONDING:
Ionic Bonding: Nature, factors favourable for the bond formation – Effect of ionization potential, electron affinity and electro negativity – Crystal Lattice energy -Born Huber cycle – Crystal structure of NaCl, CsCl – Face centered cubic lattice structure of sodium chloride – Body centered cubic lattice structure of cesium chloride – coordination number of metal ions in the crystals of sodium chloride and cesium chloride. Properties of ionic substances.
Covalent Bond: Nature – octet rule and electron formula of simple molecules ($BeCl_2$, BF_3, CO_2, NH_3, H_2O,PCl_5, SF_6, CH_4, C_2H_4, C_2H_2) – postulates of valence bond theory (qualitative treatment) – overlapping of orbitals – sigma and pi bonds - dipole moment (qualitative aspect) of simple molecules. (HCl, H_2O, SO_2, NH_3, CH_4, CCl_4) – properties of covalent substances.
Hybridization of Orbitals: sp, sp^2,sp^3, dsp^3, d^2sp^3, d^3sp^3 hybridizations – shapes of simple molecules ($BeCl_2$, BCl_3, CH_4, C_2H_6, C_2H_4, C_2H_2, NH_3, H_2O, PCl_5, SF_6 IF_7)
Bond Lengths – bond angles and bond energies – postulates of valance shell electron pair repulsion (VSEPR) theory – application to geometry of covalent molecules (beryllium chloride, boron tri-chloride, water and ammonia)
Hydrogen Bond: Concept – inter and intra molecular hydrogen bonds – typical examples, Metallic Bond, (Elementary Treatment) – Free Electron theory and Valence Bond Theory.

V. STOICHIOMETRY:
Definition : Stoichiometry, Stoichiometric equation, Stoichiometric amounts – Examples
Mole Concept: Gram atom, Gram molecule, Definition of mole, mass, formula weight – Calculations, Numerical problems; concept of equivalent weight – calculations and numerical problems.
Chemical reactions and Numerical calculations based on weight – weight, weight – volume , volume – volume relationships Calculation of empirical and molecular formulae of Carbon compounds - oxidation number – Redox reactions – Calculation of oxidation number – balancing of redox reactions by ion – electron (half reaction) method and oxidation number method

VI. GASEOUS STATE:
Gas laws – Boyle's law, Charle's law, Avogadro's law – statement and numerical problems – Derivation of Ideal Gas Equation.
Ideal gas equation: PV=nRT, values of R – numerical problems based on gas equation.
Graham's law of diffusion – Statement – numerical problems.
Dalton's law of partial pressures: Statement and applications - numerical problems.
Kinetic theory of Gases: Postulates – derivation of Kinetic Gas Equation of PV= 1/3 mnc^2 – deducing gas laws from kinetic gas laws (Boyle's law, Charle's law, Dalton's law, Graham's law) from kinetic gas equation – Molecular velocities - RMS velocity – Average Velocity and most probable velocity – Mathematical relationship between these three and variation with Temperature - Average kinetic energy of the molecules – numerical problems.

VII. SOLUTIONS:
Definition of solution: Solvent – solute, methods of expressing concentrations of solutions – molarity, molality, normality - mole fraction methods - Numerical problems.

Vapour Pressure: Definition – effect of temperature on Vapour Pressure – Vapour Pressure and Boiling point – Relative lowering of Vapour Pressure, Raoult's law – Numerical problems.

VIII. ACIDS AND BASES:
Theories of Acids and Bases – Lowry – Bronsted concept – examples – limitations – Lewis Theory – examples.
Ionic Product of Water: pH of aqueous solutions – (include both strong and weak acids and bases) – buffer solutions – types of buffers, buffer action – calculation of pH of Solutions and buffers -.
Indicators: Acid –base indicators – pH range – selection of indicators for acid – base titrations.
Hydrolysis of Salts: Types of Hydrolysis with examples.

IX. ELECTRO CHEMISTRY:
Conductors – Electrolytes – Non-electrolytes – Arrhenius theory of ionization – Faraday's laws of Electrolysis – Numerical problems.
Galvanic Cells : Definition – examples – cell notation – writing of cells and cell reactions.
Nernst Equation, Electro Chemical series, Standard Electrode Potential – e.m.f. calculation – Numerical problems

X. CHEMICAL EQUILIBRIUM AND CHEMICAL KINETICS:
Chemical Equilibrium: Reversible reactions – chemical equilibrium – dynamic nature – examples of chemical equilibrium, law of mass action – equilibrium constant – characteristics of equilibrium constant – factors affecting equilibrium – application of law of mass action to Haber's process (for Ammonia) & Contact process (for H_2SO_4) – Numerical Problems.
Le Chatelier's Principle: Statement and applications to Haber's process (for Ammonia) & Contact process (for H_2SO_4).
Chemical Kinetics: Concept of reaction rate (elementary treatment) - factors (concentration – temperature, catalyst) affecting rate of reaction, rate law, rate constant and its units - Order and Molecularity – First Order Rate equation and half-life - Collision theory of reaction rates (elementary treatment) – numerical problems.

XI. THERMO CHEMISTRY:
Internal energy – enthalpy – exothermic and endothermic reactions with examples – heats of reaction; formation, combustion, solution, neutralization – Hess Law of constant heat summation – Numerical problems – Relation between "E , "H.
Second Law of thermodynamics – entropy, free energy – Numerical problems.
Third Law of thermodynamics – definition and limitations.

XII. SURFACE CHEMISTRY:
Adsorption and absorption – Physical and Chemical adsorption – distinguishing properties – Adsorption of Gases on Metals – Adsorption from solutions (Elementary treatment).
Colloidal State: True and Colloidal solutions – explanation of terms – Dispersion medium, Dispersed phase, lyophillic and lyophobic sols using the examples – smoke, cloud, blood, milk, starch solution and gold sol. Micelles – cleaning action of soap
Emulsions: Types of emulsifying agent and emulsification – its applications
Catalysts: Characteristics of a catalyst - explanation of terms – Homogeneous and Heterogeneous catalysis, Distinction with suitable examples – auto catalysis with one example.

XIII. SOLID – STATE CHEMISTRY:
Space lattice – Unit cells cubic crystal system – close packing in crystals, X-ray study of crystals, structure of simple ionic compounds (AB and ABZ types only), imperfection in solids, properties of solids (electrical, magnetic and dielectric), Amorphous solids (elementary idea only)

XIV. HYDROGEN AND ITS COMPOUNDS:
Position of Hydrogen in periodic table – Uses of hydrogen as fuel – Molecular (covalent), Salinc (ionic) and interstitial hydrides.
Water: Hardness of Water and its removal
Heavy water – electrolytic preparation – properties and uses of heavy Water.
Hydrogen Peroxide: Preparation (laboratory, electrolytic and auto - oxidation) and concentration, properties of H_2O_2 as oxidizing agent and reducing agent, structure and uses of H_2O_2

XV. ALKALI AND ALKALINE EARTH METALS:
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties, chemical properties with reference to oxides, halides and carbonates.
Sodium and Magnesium: Occurrence – extraction of sodium (Castner and Down process) – extraction of Magnesium (from Carnalite and Magnesite) – Typical physical and chemical properties – Uses. Alloys of magnesium (Magnalium and Electron) preparation, properties and uses of the following compounds - Sodium hydroxide, Sodium bicarbonate, Plaster of Paris, Lime Mortar and Gypsum.

XVI. III GROUP ELEMENTS
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties – Chemical properties with reference to oxides, halides and hydroxides.
Aluminium: Occurrence – extraction – purification (electrolytic) – typical physical and chemical properties – uses including aluminothermic process **-** Preparation, properties and uses of Potash Alum.
Electron deficient compounds: Concept and examples, Diborane: Preparation, properties and structure

XVII. IV GROUP ELEMENTS:
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties of carbon and silicon.
Physical forms of Carbon: Allotropy of carbon – structure of diamond and graphite.
Preparation – properties – structure and uses of Silicon and SiO_2 . Comparison of SiO_2 with CO_2.
Fuel gases: Producer gas and water gas – preparation – calorific values and uses.

XVIII. V GROUP ELEMENTS:
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties.
Chemical Properties of Compounds of Nitrogen & Phosphorous: Hydrides, Oxides, Halides and structural aspects - oxidation states of Oxy - acids.
Industrial Preparation and Uses of : Ammonia, and Super phosphate of lime.

XIX. VI GROUP ELEMENTS:
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties – allotropy of elements.
Chemical Properties of Compounds of Oxygen and Sulphur: Hydrides, oxides, halides and structural aspects and oxidation states of Oxy acids.
Preparation, properties and uses of Ozone, Sodium thiosulphate.

XX. VII GROUP ELEMENTS:
General Characteristics: Electronic configuration – position in the long form of the periodic table – trends in physical properties.
Fluorine and Chlorine: Preparation, properties and uses. Structure and oxidation states of Oxides and oxyacids of chlorine.
Bleaching Powder: Preparation, properties and uses.

XXI. NOBLE GASES:
Discovery, Occurrence, isolation and uses of Noble Gases, Structural aspects of Xenon Compounds (Oxides and Fluorides)

XXII. TRANSITION ELEMENTS (d block):
Definition – General characteristics of 3d series - Electronic configuration – position in the long form of the periodic table with special reference to variable oxidations states, formation of alloys and complex compounds – Werner's theory **-** magnetic properties, Color
Coordination complexes: Werner's notations (elementary account) – IUPAC formulation and nomenclature of mono-nuclear coordination compounds – EAN – Isomerism (introduction).

XXIII. ENVIRONMENTAL CHEMISTRY:
Terminology: Environment, pollutant, contaminant, receptor, sink, speciation, dissolved oxygen, threshold limit value.
Air Pollution: Common air pollutants – CO and oxides of Nitrogen and Sulphur – acid rains and green - house effect
Water pollution: Common Water pollutants. Organic Pollutants, Biological Oxygen Demand (BOD), Inorganic pollutants – Water treatment with respect to fluorine content – Nalgonda Technique
Ozone layer and effect of freons (CFC)

XXIV. HYDROCARBONS – I (ALKANES AND ALKENES) :
Classification - Formation of sigma and pi bonds. Homologous series – concept and its significance.
Isomerism: Concept - Structural isomerism (chain, position, functional isomerism) – Stereoisomerism – classification; Geometrical isomers – examples – E,Z – notation. Optical isomers – examples – D,L and R,S – notation – Cahn – Ingold – Prelog rules – Meso compounds – Racemic mixture and Resolution (Introductory treatment) – Diasteriomers – definition – Erythro and Threo nomenclature.

Nomenclature of Aliphatic Hydrocarbons : IUPAC system
Methane and Ethane: Preparation by reduction of alkyl halides, Wurtz method, Grignard method, de-carboxylation, Kolbe's'electrolysis, Sabtier – Senderen's reaction.
Properties: Physical and Chemical properties - Halogenation, Nitration, Pyrolysis, Oxidation - Uses
Ethylene: Methods of preparation**:** dehydration of alcohols – dehydrohalogenation of alkylhalides **-** dehalogenation of dihalides – Hydrogenation of Acetylene, Industrial methods.
Properties of Ethylene: Addition of hydrogen, halogens, hydrogen halides, water, hypohalous acids, mineral acids, Polymerisation – oxidation (with Beayers reagent) – ozonolysis - Uses.

XXV. HYDROCARBONS – II
Acetylene: Preparation **-** Dehydrohalogenation of 1,2 - dihalides – hydrolysis of CaC_2 dehalogenation – Kolbe's electrolysis
Properties: Oxidation, addition of hydrogen, halogens, hydrogen halides, water, Hydrogen Cyanide, Acetic Acid, Ozone - trimerization, salt formation uses
Benzene: Preparation from acetylene, coal tar distillation, structure of benzene, resonance - aromatic property. Properties: Friedel – Craft's reaction, halogenation, nitration, sulphonation addition reactions-.Hydrogenation – Addition of Halogens and Ozonolysis - Uses

XXVI. ALKYL HALIDES
Nomenclature and classification to Primary, Secondary & Tertiary Alkyl halides
Ethyl Chloride: Preparation – from alcohols using Lucas reagent, PCl_3, PCl_5 and $SOCl_2$.
Properties: Reduction, hydrolysis, dehydrohalogenation, Wurtz reaction, reactions with KNO_2, $AgNO_2$, KCN, AgCN, Mg – Grinard reagent - Sodium ethoxide.
Chloroform: Preparation from ethanol using bleaching powder & water and chloralhydrate. Properties: Oxidation, isocyanide formation – hydrolysis – uses.

XXVII. ALCOHOLS
Nomenclature and classification to Primary, Secondary & Tertiary Alcohols
Ethanol: Preparation - Hydrolysis of alkyl halides, hydration of alkenes, fermentation of molasses & starch, Reduction of Acetaldehyde – Grignard Reagent - Properties: Hydrogen bonding - Reaction with sodium , esterification, action with conc H_2SO_4 reaction with Lucas reagent, PBr_3, PCl_5, oxidation with Potassium dichromate and Cu / 300°c. Combustion, chloroform formation. Differentiation with Lucas reagent - Uses.

XXVIII. ETHERS
Nomenclature - **Diethyl ether** - Preparation from alcohols - Ethyl Bromide –Williamson synthesis – Properties – Reactions with Cl_2, Oxygen, H_2SO_4, HI, PCl_5, CH_3COCl, $(CH_3CO)_2O$, $K_2Cr_2O_7$, Al_2O_3 and CO - uses

XXIX. ALDEHYDES AND KETONES :
Nomenclature - **Acetaladehyde & Acetone**: Preparations - Oxidation of Alcohols, heating calcium salts – Catalytic dehydrogenation of Alcohols, Wacker's Process, Reduction of Acid Chlorides.
Properties: oxidation, reduction with H_2 / Ni and $LiAlH_4$, Clemensen and Wolf – Kishner reduction - addition of $NaHSO_3$, HCN, NH_3, hydroxylamine, phenylhydrazine, 2,4 – DNP, Grignard Reagent , aldol condensation, oxidation with Tollen's and Fehlings reagents – Iodoform Test.

XXX. CARBOXYLIC ACIDS
Nomenclature - **Acetic Acid** – Preparations - Oxidation of alcohols, aldehydes , hydrolysis of cyanides, Carboxylation of Grignard Reagent .
Properties: Acidity – reactions with Na, NaOH, $NaHCO_3$, esterification - acid cholrides, anhydrides, amide formation, halogenation – Reduction of acids – salts of carboxylic acids - Uses.

XXXI. NITROGEN COMPOUNDS
Nomenclature of Amines and Nitro Compounds - **Nitro-Benzene** - Preparation - nitration of Benzene.
Properties : Reduction in acidic , basic, neutral media and with $LiAlH_4$ - Uses
Classification of amines – **Aniline -** Preparation : reduction of nitro benzene. Properties: basic nature – salt formation with HCl, alkylation, N – acetylation, N-benzoylation , diazotisation – carbylamine reaction - Uses.

XXXII. CHEMISTRY IN BIOLOGY AND MEDICINE:
Survey on importance of Metals in the bio molecules viz., Haemoglobin, Cyanocobalamine (Vitamin B_{12}) and chlorophyll (Elementary treatment) – basic Structure, function of metal ions and uses.
Common Drugs used in Medicine: Acetyl Salicylic acid (Aspirin) – Paracetamol and Methyl Salicylate – Preparation and Uses.

XXXIII. POLYMERS:
Classification of polymers, addition, condensation, co-polymerization, natural rubber, vulcanization of rubber, synthetic rubber, molecular weight determination, biopolymers, biodegradable polymers and some commercially important polymers – Polyglycolic, polylactic acid and poly- â-hydroxy Gutyrate – Co-â-hydroxy valcrate (PH)

XXXIV. BIOMOLECULES:
Carbohydrates: clasfication, monosaccharides, structures of pentoses and hexoses, anomeric carbon, mutarotation, simple chemical reations of glucose, disaccharides, reducing and non-reducing sugars – sucrose, maltose and lactose, polysaccharides, elementary idea of structures of starch and cellulose.
Proteins: Amino acids, peptide bond, polypeptides, primary structure of proteins, simple idea of secondary and tertiary structure of proteins, denaturation of proteins and enzymes.
Nucleic Acids: Types of nucleic acids, primary building blocks of nucleic acids, chemical composition of DNA and RNA – primary structure of DNA and its double helix. Replication, transcription and protein synthesis, genetic code (definitions and elementary treatment only)
Lipids: Classification, structure, functions in bio-systems.
Hormones: Classification, structural features and functions in bio-systems.
Vitamins: Classification and functions of vitamins in bio-systems.

ANNEXURE – II
MODEL QUESTIONS - BOTANY

1. Coffee plant has chromosome number of 2n in its somatic cells. What is the chromosome number in the edible part of coffee seed?
   1) n 2) 2n 3) 3n 4) 4n
2. Assertion (A) : A morphology based approach to taxonomy is called 'alpha taxonomy' and it is old fashioned.
   Reason (R) : A multi-disciplinary approach to taxonomy called 'Omega taxonomy' is favoured in recent years, as it excludes morphological features.
   1) A and R are true and R is the correct explanation of A
   2) A and R are true but R is not the correct explanation of A
   3) A is true but R is false
   4) A is false but R is true.
3. The triploid number of chromosomes of the first taxon is 10 times more than the haploid number of chromosomes of the second taxon, while the diploid number of the third taxon is 6 times more than the haploid number of the fourth taxon. Which one of the following shows the ascending order of the number of chromosomes in their respective endosperm?
   1) Oryza – Allium – Saccharum – Nicotiana
   2) Allium – Oryza – Nicotiana – Saccharum
   3) Nicotiana – Saccharum – Oryza – Allium
   4) Saccharum – Oryza – Nicotiana – Allium/
4. Study the following lists:

List I	List II
A) Population	I. Part of the earth consisting of all the ecosystems of the world.
B) Community	II. Assemblage of all the individuals belonging to different species occurring in an area.
C) Ecosystem	III. Group of similar individuals belonging to the same species found in an area.
D) Ecosphere	IV. Interaction between the living organisms and their physical environmental components.
	V. Classification of organisms based on the type of environment.

The correct match is:

	(A)	(B)	(C)	(D)
(1)	I	IV	V	III
(2)	V	II	III	I
(3)	II	III	V	IV
(4)	III	II	IV	I

5. Study the following table:

I.	Dehydration	Condensation	Decarboxylation
II.	Isomerisation	Decarboxylation	Hydration
III.	Decarboxylation	Condensation	Hydration
IV.	Condensation	Decarboxylation	Isomerisation

Select the correct pair of answers in which the former in pair shows the set of reactions taking place during Kreb's cycle and the latter in the pair shows the set of reactions that do not take place during glycolysis:
1) I and III 2) I and II 3) II and III 4) II and IV

6. The following statements are given about plant growth hormones:
I. Kinetin is a degradative substance from DNA molecule
II. ABA is present in all the plants
III. Low ratio of cytokinins to auxins favours root formation only
IV. ABA is synthesized catabolically through mevalonate pathway.
The correct combination is:
1) I and II 2) II and III 3) I and III 4) III and IV

MODEL QUESTIONS - ZOOLOGY

1. Abdominal ganglion in cockroach is not found in this segment(s):
(1) 2 and 3 2) 4 3) 5 4) 6

2. Identify the correct answer from the choices given below:
A. All Triploblastic animals except the gastrophods exhibit bilateral symmetry
R. Bilateral symmetry is considered an important forward step in Animal evolution
1) Both A and R are true and R is the correct explanation to A
2) Both A and R are false
3) Only A is true, R is false
4) Both A and R are true but R is not the correct explanation to A.

3. Match the following with reference to Pheretima:

Set I	Set II
a) Spermiducal funnels	1. 200 - 250
b) Ring vessels	2. 17 and 19th segments
c) Exo-nephric nephridia	3. 12/13th segment
d) Accessory gland	4. 10, 11, 12 and 13th segments
e) Ovary	5. 10th and 11th segments

Correct set is:
1) a-5, b-1, c-4, d-2, e-3
2) a-5, b-4, c-1, d-2, e-3
3) a-1, b-5, c-4, d-2, e-3
4) a-5, b-1, c-4, d-3, e-2

4. The following statements are true on hormones:
I. Adenohypophysis produces gonadotropins
II. Besides sex cells, hormones are also produced by testis and ovary
III. Testosterone is produced by Leydig cells
IV. Estrogen is produced by ovary.
Which of the above factors influence secondary sexual characters?
1) III and IV 2) II, III and IV 3) II and IV 4) All

5. Study the following:

Animal	Character	Distribution
i) Tachyglossus	Egg laying	North America
ii) Didelphis	Premature young one is carried in the Marsupium	South America
iii) Panthera leo	The embryo develops in the uterus of the mother	Asia
iv) Apteryx	Female incubates the eggs	Africa

Which of the above two are correct:
1) i and iv 2) i and ii 3) ii and iii 4) iii & iv

6. The following is the sequence of part of the leg of cockroach from the base to the tip.
A) Femur B) Tarsus C) Coxa D) Tibia E) Trochanter
The correct sequence is
1) CEADB 2) AECBD 3) ACEBD 4) CDEAB.

MODEL QUESTIONS - PHYSICS

1. Some physical constants are given in List 1 and their dimensional formulae are given in List 2. Match the correct pairs in the lists:

List 1	List 2
a) Planck's constant	e) $[ML^{-1}T^{-2}]$
b) Gravitational constant	f) $[ML^{-1}T^{-1}]$
c) Bulk modulus	g) $[ML^{2}T^{-1}]$
d) Coefficient of viscosity	h) $[M^{-1}L^{3}T^{-2}]$

1) a-h; b-g; c-f; d-e 2) a-f; b-e; c-g; d-h
3) a-g; b-f; c-e; d-h 4) a-g; b-h; c-e; d-f

2. A mass of 6.5 kg is hanging from the end of a 60 cm long steel wire (Y = 2 x 10^{11} Pa) with area of cross-section 0.05 cm^2. When it is revolving in a vertical circle it has an angular velocity of 2 revolutions per second, at the bottom of the circle. Approximate elongation of the wire (in meters) when the mass is at its lowest point of the trajectory is:
1) 8 x 10^{-4} 2) 4 x 10^{-4} 3) 8 x 10^{-5} 4) 4 x 10^{-5}

3. 'm' grams of a gas of molecular weight M is flowing in an isolated tube with velocity V. If the gas flow is suddenly stopped the rise in its temperature is: (γ = ratio of specific heats; R = universal gas constant; J = mechanical equivalent of heat)
1) $\frac{MV^2(\gamma-1)}{2RJ}$ 2) $\frac{m}{M}\frac{V^2(\gamma-1)}{2RJ}$ 3) $\frac{mV^2\gamma}{2RJ}$ 4) $\frac{MV^2\gamma}{2RJ}$

4. Two coherent monochromatic light sources are located at two vertices of an equilateral triangle. If the intensity due to each of the sources independently is 1 Wm^{-2} at the third vertex. The resultant intensity due to both the sources at that point (i.e at the third vertex) is (in Wm^{-2}):
1) Zero 2) $\sqrt{2}$ 3) 2 4) 4

5. Consider the following two statements A and B and identify the correct answer:
'A' : Constantan-Copper thermocouple is generally used to measure temperatures upto 1600^{o}C.
'B' : In an iron-copper thermocouple, current flows from iron to copper through cold junction.
1) Both A and B are true
2) Both A and B are false
3) A is true but B is false
4) A is false but B is true.

6. Assertion (A) : When a conducting wire loop which is inside a uniform magnetic field directed perpendicular to its plane, is moving with uniform velocity, an e.m.f is induced in it.
Reason (R) : When the magnetic flux linked with a conducting wire loop changes with time an e.m.f is induced in the cable.
1) Both (A) and (R) are true, and (R) is the correct explanation of (A)
2) Both (A) and (R) are true, but (R) is not the correct explanation of (A)
3) (A) is true, but (R) is false
4) (A) is false, but (R) is true

7. Identify the correct order in which the values of M.I decreases for the following cases:
i. M.I. of solid sphere or mass M and Radius R about its diameter as axis of rotation
ii. M.I of Inertia of a uniform ring of Mass M and Radius R about its diameter as axis of rotation

iii. M.I of a thin uniform disc of mass M and Radius R about a tangent perpendicular to its plane as axis of rotation
iv. M.I of a uniform cylinder of mass M/2 about its own axis as axis of rotation
(1) (iii), (ii), (i) and (iv) (2) (i), (iv), (iii) and (ii)
(3) (ii), (i), (iv) and (iii) (4) (iv), (iii), (ii) and (i)

MODEL QUESTIONS - CHEMISTRY

1. Observe the following statements:
I. The physical and chemical properties of elements are periodic functions of their electronic configuration.
II. Electronegativity of fluorine is less than the electronegativity of chlorine.
III. Electropositive nature decreases from top to bottom in a group.
The correct answer is:
(1) I, II and III are correct (2) Only I is correct
(3) Only I and II are correct (4) Only II and III are correct

2. AB is an ionic solid. The ionic radii of A^+ and B^- are respectively r_c and r_a. Lattice energy of AB is proportional to
1) $\frac{r_c}{r_a}$ 2) $(r_c + r_a)$ 3) $\frac{r_a}{r_c}$ 4) $\frac{1}{(r_c + r_a)}$

3. The rate constant of a first order reaction at 27°C is 10^{-3} min^{-1}. The temperature coefficient' of this reaction is 2. What is the in min^{-1}) at 17°C for this reaction?
(1) 10^{-3} (2) 5×10^{-4} (3) 2×10^{-3} (4) 10^{-2}

4. Match the following lists:

List – I	List – II
A. Alkanes	1. Molasses
B. Ethers	2. Hell-Volhard-Zelensky reaction
C. α-Halogenation	3. Williamson synthesis
D. Ethyl alcohol	4. Wurtz reaction
	5. Aldol Condensation

The correct answer is:

	A	B	C	D
(1)	4	3	2	1
(2)	3	4	2	5
(3)	2	5	3	4
(4)	5	2	3	4

5. Assertion (A) : A current of 96.5 amperes is passed into aqueous $AgNO_3$ solution for 100 seconds. The weight of silver deposited is 10.8 g (At.wt. of Ag = 108).
Reason (R) : The mass of a substance deposited during the electrolysis of an electrolyte is inversely proportional to the quantity of electricity passing through the electrolyte.
The correct answer is:
1) Both A and R are true and R is the correct explanation of A
2) Both A and R are true and R is not the correct explanation of A
3) A is true but R is not true
4) A is not true but R is true.

6. The following are some statements about α -D-glucose
i) It is a ketohexose
ii) It is dextro-rotatory
iii) It exhibits mutarotation
iv) It readily responds to Schiff's test
The correct combination is
1) All are correct 2) Only i and ii are correct
3) only ii is correct 4) Only ii and iii are correct.

7. Assertion A : The EAN of $[Fe(CN)_6]^{-4}$ is 36
Reason R : EAN = [A-OX.St + 2 (CN)]
The correct answer is:
1) Both A and R are true, and R is the correct explanation of A
2) Both A and R are true, and R is not the correct explanation of A
3) A is true, but R is false
4) A is false but R is true.

I. Important instructions to candidates:

a. Hall Ticket issued to you is an important document. Please preserve it carefully.
b. Hall Ticket is not transferable. Any tampering of hall ticket will automatically lead to the disqualification of the candidate.
c. Candidate shall arrive at the examination hall atleast one hour before commencement of the examination. This will enable the candidate to familiarize himself/herself with the OMR response sheet.
d. Candidates will not be allowed to enter examination hall once the examination has commenced.
e. Sharpened HB pencil will be supplied to all candidates writing the EAMCET – 2007 examination in the examination halls. Candidates are advised to use the HB pencils supplied by the Convener.
f. Candidates are permitted to carry the following to examination hall.
i) Hall-Ticket ii) A good Ball Point Pen (Blue or Black) iii) A Sharpener iv) A good Eraser
g. The candidates who submitted their application through online only, need to submit the filled in summary sheet to the invigilator at the time of examination.
h. Besides the items listed in serial No. f above, the candidate should not bring any other material. **This instruction sheet also should not be brought into the examination hall. Candidates should not bring Log books, Tables, Calculators, pagers, Cell Phones etc., into the examination hall. Any candidate found in possession of any forbidden material will be sent out of the examination hall**.
i. Candidates must remain seated in their allotted places till the completion of the examination. **In no case they will be allowed to leave the examination hall till the end of the examination. Before leaving the examination hall, the candidates must return both the question paper booklet and the OMR response sheet to the invigilator. Candidate is permitted to leave the examination hall only when the invigilator satisfies with the complete receipt of question paper and OMR sheet and allow you to leave the hall.**
j. Every candidate appearing for EAMCET – 2007 shall be provided with a specially designed Optical Mark Reader (OMR) response sheet (Answer Sheet), on which the candidate shall have to mark his or her answers and other relevant data. The method of marking the answers is illustrated in this section. Candidates are advised to go through the instructions given for marking the answers and other entries on the Optical Mark Reader (OMR) response sheet thoroughly and practice the same at their residence which should make it easy for them to answer in the examination hall.
k. The Optical Mark Reader (OMR) response sheet should be handled carefully by the candidates. They are advised not to fold, wrinkle, or tear the response sheet under any circumstances. Further the candidates are advised not to scribble or make any marks on the response sheet except marking the answers and other relevant data at the appropriate place on the response sheet. Any violation of these instructions will automatically lead to the disqualification of the candidate.
l. i) Candidate shall note that they will not be given under any circumstances a second blank Optical Mark Reader (OMR) response sheet. Hence they are advised to be careful while handling their response sheet.
ii) In EAMCET – 2007, the candidate name, Hall-ticket Number and photograph are printed by the Convener on OMR sheet. Candidate shall ensure that he/she received the his/her own OMR sheet. If there is any discrepancy in details or damage to the sheet the same shall be brought to the notice of invigilator immediately.

m. Candidate shall read carefully the instructions before starting to answer the questions.
n. The question paper booklet given to the candidate shall consist of 160 multiple choice type questions in three different sections with four responses given to each question out of which only one response is correct for the given question. **Candidates shall mark the correct answer in the Optical Mark Reader (OMR) response sheet by shading in Dark the appropriate circle with HB Pencil supplied to the candidate in the examination hall by the invigilator. <u>They should not use under any circumstances Ball Point Pen for this purpose.</u>**
o. Candidates are required to answer all questions. All questions carry equal marks. There is no negative marking for incorrect answers.

II. Instructions to fill up OMR response sheet:

a. Follow the INSTRUCTIONS given on the OMR Response Sheet. Fill up information and darken all the Relevant Circles on the OMR response sheet carefully, otherwise your Response Sheet will be invalid.
b. Use HB Pencil only for darkening the circles for information and answering on the response sheet. Use Ball Point Pen wherever directed on the response sheet to write information.

Example: 

Please darken completely one circle only for each question as shown above. If you darken more than one circle against a question, the response to that question will be invalidated and no mark will be assigned to you for that question.

REASON

Circle only partly darkened. It should be darkened completely.

REASON

Circle is to be only darkened. No other Marks as ✓ is not to be put.

REASON

Circle is not darkened. Putting mark like ✕ for the correct answer is treated as wrong.

c. Please darken the most appropriate response chosen by you, only in the corresponding circle against the number corresponding to the question, you are attempting.
d. Please do not make any stray marks any where on the OMR Response Sheet or else the OMR Response Sheet will be invalidated.
e. If you wish to **change an Answer,** please **ERASE COMPLETELY the already darkened Circle** and then darken a new circle.
f. Marking of SEX and Category : If the candidate is male and belongs to BCA category darken the circles corresponding to Male under SEX and BCA under category as shown below:

MALE	FEMALE
●	○

BCA	BCB	BCC	BCD	SC	ST
●	○	○	○	○	○

Darken the digits corresponding to the Question booklet number as indicated below:

4	0	2	5	6	7
0	●	0	0	0	0
1	1	1	1	1	1
2	2	●	2	2	2
3	3	3	3	3	3
●	4	4	4	4	4
5	5	5	●	5	5
6	6	6	6	●	6
7	7	7	7	7	●
8	8	8	8	8	8
9	9	9	9	9	9

ANNEXURE – III
DEFINITION OF LOCAL / NON-LOCAL STATUS

1. A Candidate shall be regarded as a local Candidate in relation to a local area (AU/OU/SVU)
   1.1 If he/she has studied in an Educational Institution or Educational Institutions in such local area for a period of not less than four consecutive academic years ending with the academic year in which he/she appeared or first appeared in the relevant qualifying examination as the case may be.
   1.2 Where, during the whole or any part of the four consecutive academic years in which he/she appeared, or first appeared in the relevant qualifying examination, he/she has not studied in any educational institutions, if he/she resided in that local area for a period of not less than four years immediately preceding the date of commencement of the relevant qualifying examination in which he/she appeared, or first appeared, as the case may be.
2. A candidate who is not regarded as local candidate under clause (1.1) above in relation to any local area shall
   2.1 If he/she studied in the educational institutions in the state for a period of not less than seven consecutive academic years ending with the academic year in which he/she appeared or first appeared for the relevant qualifying examination as the case may be, be regarded as a local candidate in relation to
      i. Such local area where he/she studied for the maximum period out of period of seven years.

      OR

      ii. Where the period of his/her study in two or more local areas is equal, such local area where he/she studied last in such equal periods.
   2.2 If during the whole or any part of the seven consecutive academic years ending with the academic year in which he/she appeared or first appeared for the relevant qualifying examination, he/she has not studied in the educational institutions, in any local area, but has resided in the state during the whole of the said period of seven years, be regarded as a local candidate in relation to
      i. Such local area where he/she has resided for the maximum period out of the said period of seven years.

      OR

      ii. Where the period of his/her residence in two or more local areas is equal such local area where he/she had resided last in such periods.

Note: Local area in respect of Andhra University (A.U. area) includes Nagarjuna University area. In respect of Sri Venkateswara University (S.V.U. area), it includes Sri Krishnadevaraya University area. In respect of Osmania University (O.U. area), it includes Kakatiya University area.

3. Candidates coming under any of the categories given below and not satisfying the conditions mentioned in 1 or 2 above are treated as 'Non-Local' to all the three University areas specified above.
   a. Candidates who have resided in the state of A.P. for a total period of 10 years or more excluding the period of study outside this state.

   OR

   b. Candidates either of whose parents has resided in this state for a total period of 10 years or more excluding the periods of employment outside the state

   OR

   c. Candidates either of whose parents is employed in the State of A.P. in the State or Central Government Public Sector Corporations, Local Bodies, Universities and other similar quasi Government Institutions within this state, at the time of submitting the application

   OR

   d. Candidates who are spouses of those employed in the State of A.P. in the State or Central Government, Public Sector Corporations, Local Bodies, Universities and other similar quasi Government Institutions within this state, at the time of submitting the application.

   For full details refer G.O.P.No. 646, dated 10.07.1979.

Note: Blank proforma III is provided for submitting relevant information regarding Local/Non-Local status of candidates.