

**INSTRUCTION BOOKLET**

(The candidates are advised to preserve this Booklet with them for any future reference)

Application No. : AM

**AGRICULTURE AND MEDICINE****ENGINEERING, AGRICULTURAL & MEDICAL COMMON ENTRANCE TEST**  
(on behalf of APSCHE)**EAMCET-2010***FOR ENTRANCE TEST RELATING TO PROFESSIONAL COURSES IN*

- A)** B.Sc.(Ag.) / B.Sc.(Hort.) / B.V.Sc. & AH / B.F.Sc. / B.Tech. (FST) / B.Sc. (CA&BM)  
**B)** MBBS / BDS / BAMS / BHMS / BNYS  
**C)** B.Pharm / B.Tech.(Bio-Technology) (Bi.P.C.)  
**D)** Pharm-D (Bi.P.C.)

**EAMCET - 2010 (AM) on 30-05-2010 from 2-30 PM to 5-30 PM****Note:**

- Fill in the Application form, OMR / ICR Application form and Acknowledgement Card after carefully reading the instructions. Tag all the enclosures (see check list) with Acknowledgement Card except OMR / ICR Application Form. Keep all the above mentioned items in the separate envelope (12" x 10") supplied to you and submit in person either to the respective Regional Coordinator (as listed in this booklet) or to the Convener, EAMCET-2010 or send it by Registered Post with Ack. due, so as to reach the Convener, EAMCET - 2010 on or before **03.04.2010** by 5.00 PM without late fee.
- The **application number printed above should be quoted for reference**, in all further correspondence.
- Information about the Entrance test is also available in the Website <http://www.apearcet.org>

**LAST DATE FOR SUBMISSION OF APPLICATION**

<b>WITHOUT LATE FEE</b> (Receipt of application at all Regional centres, Convener's Office and for online submission)	<b>03-04-2010</b> <b>(before 5.00 PM)</b>
<b>WITH LATE FEE* Rs. 500/-</b> (Receipt of application at the Convener's Office at Hyderabad in person or by post & Online submission)	<b>09-04-2010</b> <b>(before 5.00 PM)</b>
<b>WITH LATE FEE* Rs. 1000/-</b> (Receipt of application at the Convener's Office at Hyderabad in person or by post & Online submission)	<b>15-04-2010</b> <b>(before 5.00 PM)</b>
<b>WITH LATE FEE* Rs. 5000/-</b> (Only at the Convener's Office, Hyderabad in person only & No online submission)	<b>10-05-2010</b> <b>(before 5.00 PM)</b>
<b>WITH LATE FEE* Rs. 10000/-</b> (Only at the Convener's Office, Hyderabad in person only & No online submission)	<b>27-05-2010</b> <b>(before 5.00 PM)</b>

**\*LATE FEE is to be paid in the form of a Demand Draft  
obtained from any Nationalized Bank, payable at HYDERABAD  
in favour of Secretary, A.P. State Council of Higher Education, Hyderabad**

For candidates submitted with late fee of Rs.10,000/-  
Test Centre will be allotted only at Hyderabad / Secunderabad

Address for Correspondence:  
**CONVENER, EAMCET - 2010**  
**EXAMINATIONS BUILDING, GROUND FLOOR, JNT UNIVERSITY HYDERABAD**  
**KUKATPALLY, HYDERABAD - 500 085. ANDHRA PRADESH**

## EAMCET - 2010 (Agriculture and Medicine)

# AM

A Common Entrance Test designated as "Engineering, Agricultural & Medical Common Entrance Test" (EAMCET – 2010) will be conducted by JNT University Hyderabad for the academic year 2010-2011 for admission into the First Year of Professional Courses i.e. A) B.Sc.(Ag.) / B.Sc.(Hort.) / B.V.Sc. & AH / B.F.Sc. / B.Tech. (FST) / B.Sc. (CA&BM) B) MBBS / BDS / BAMS / BHMS / BNYS C) B.Pharm / B.Tech.(Bio-Technology) (Bi.P.C.) D) Pharm-D (Bi.P.C)

**Note: Admission will be conducted on a total web based counseling for the academic year 2010-2011, the details of which will be given by the Convener (Admissions) separately in due course of time.**

### I. PARTICULARS OF EAMCET – 2010

The examination is on **30-05-2010** between **2.30 P.M and 5.30 P.M.**

The Entrance test is of 3 hour 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 are 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 – 2010

Candidates satisfying the following requirements shall be eligible to appear for EAMCET-2010

1. Candidates should be of Indian Nationality or Persons of Indian Origin (PIO) / Overseas Citizen of India (OCI) Card Holders.
2. 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 as subsequently amended.
3. 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 recognized 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.Sc.(Ag.)
    - i. Physical Sciences
    - ii. Biological or Natural Sciences
    - iii. Agriculture
    - iv. Vocational Course in Agriculture
  - b. B.Sc.(Hort)  
same as above
  - c. B.V.Sc. & A.H.
    - i. Physical sciences
    - ii. Biological or Natural Sciences
    - iii. Vocational Courses in Veterinary Sciences
  - d. B.F.Sc.
    - i. Physical Sciences
    - ii. Biological or Natural Sciences
    - iii. Vocational Courses in Fishery Sciences
  - e. B.Tech (FS & T)
    - i. Mathematics
    - ii. Physical Sciencesor
    - i. Physical Sciences
    - ii. Biological or Natural sciences
  - f. B.Sc (CA & BM)
    - i. Mathematics
    - ii. Physical Sciencesor
    - 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 -2010.(AM Category)

ii) Candidates Should complete 17years of age as on 31<sup>st</sup> December of the year of admission and an upper age limit of 22 years for all the candidates and 25 years in respect of SC/ST candidates as on 31<sup>st</sup> December of the year of admission.

3. B. For MBBS/BDS/BAMS/BHMS/BNYS Courses:

(i) Candidates should have passed or appeared for the final year of Intermediate Examination (10+2 pattern) with Biology, Physics and Chemistry as optionals including practical tests in these subjects, **OR** any examination (10+2 pattern) with Biology, Physics and Chemistry including practical tests in each of these subjects, recognized as equivalent to Intermediate by the Board of Intermediate Education, A.P.

(ii) Candidates should complete 17years of age as on 31<sup>st</sup> December of the year of admission. There is no upper age limit.

3. C. For B. Pharm Course:

(i) Candidates should have passed or appeared for the final year of the intermediate examination (10+2 pattern) with Biology, Physics and Chemistry as optionals, conducted by the Board of Intermediate Education, A.P. as equivalent thereto.

(ii) Candidates should have completed 16 years of age by the date of commencement of admission or on such other date as may be notified by the CET committee. There is no upper age limit

3. D. For B.Tech (Bio-Technology) Course:

Candidates should have passed or appeared for the final year of the intermediate examination (10+2 pattern) with Biology, Physics and Chemistry as optionals, along with the bridge course examination in mathematics conducted by the Board of Intermediate Education, Govt. of A.P shall be eligible.

3. E. For Pharm-D Course:

(i) candidates should have passed or appeared for the final year of Intermediate Examination (10+2 pattern) with Physics, Chemistry and Biology as optional conducted by the Board of Intermediate Education, Andhra Pradesh or any other examination recognized by the Board of Intermediate Education, Andhra Pradesh as equivalent thereto or should have passed or appeared at the final year of the diploma examination in pharmacy course conducted by the Andhra Pradesh State Board of Technical Education and Training or any other examination recognized as equivalent thereto by the Board of Intermediate Education, Andhra Pradesh.

(ii) The candidates should have completed 17 years of age as on 31<sup>st</sup> December of the year of admission to the above course.

### III. GENERAL INFORMATION / INSTRUCTIONS:

1. The Convener, EAMCET – 2010 reserves the right to reject the application of the candidate at any stage, if (i) the application is incomplete (ii) the required attested copies of certificates are not enclosed (iii) the candidate fails to satisfy the eligibility conditions, (iv) any false or incorrect information is furnished (v) the entries in the application form are illegible (vi) 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 applications after it is received by the Convener.
2. 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 contains questions in "English" and "Telugu" medium. Candidates, who have studied the qualifying examination in Urdu medium and wish to avail **assistance for translating of 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, since an amount of Rs. 250/- was already collected towards the cost of application form, fees for entrance test, registration fee and towards service charges at the time of purchasing the application.

### VI. SAME CENTRE FOR CANDIDATES APPEARING FOR BOTH ENGINEERING AND AGRICULTURE & MEDICINE:

Candidates of AM – Category who are eligible and desirous of taking the test in E - Category, in addition to the test for AM-Category should send / submit both the applications (E & AM Category) together along with relevant enclosures to each application, so that same centre can be allotted to them for both the tests. If this instruction is not followed, the candidate may be allotted different test centres for E & AM category tests.

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

Sl. No.	Regional Centre	Name of the Regional Coordinator and address with Telephone Number along with STD Code	Venue for submission of filled in applications & collection of hall-tickets
01.	ADILABAD	<b>Sri Ch. Veerabhadaram</b> , Principal, Govt. Degree & PG College for Men, Shantinagar, Adilabad - 504 001 Ph : 08732-226995 (O)	Govt. Degree & PG College for Men, Shantinagar, Adilabad - 504 001
02.	ANANTAPUR	<b>Dr. V. Sankar</b> , Principal, JNTUA College of Engg. (Autonomous) Sir M.V. Road, Anantapur-515 002 Ph : 08554-273013 (O)	JNTUA College of Engg. (Autonomous) Sir M.V. Road, Anantapur - 515 002
03.	ELURU	<b>Prof. A. Sri Ram</b> , Director, Dept. of Management Studies, Sir C.R.R. College of Engineering, Vatlur, Eluru – 534 007 Ph : 08812-211998, 230840 (O)	Sir C.R.R. College of Engineering Eluru - 534 007
04.	GUNTUR	<b>Dr.B. Raveendra Babu</b> , Vice - Principal, RVR & JC College of Engineering, City Centre, SVN Colony Main Road, Beside Venkateswara Temple, Guntur – 522 006. Ph. : 0863-2288280 (O), 2232505 (City Off)	RVR & JC College of Engineering City Centre, SVN Colony Main Road, Beside Venkateswara Temple, Guntur – 522 006.
05.	KADAPA	<b>Prof. P. Jaya Ram Reddy</b> , Regional Coordinator, EAMCET - 2010 CP Brown Library, Yerramukkapalli, Kadapa-516 002 Ph : 08562-276820	CP Brown Library, Yerramukkapalli, Kadapa-516 002
06.	KAKINADA	<b>Dr. E.V. Prasad</b> , Principal, University College of Engg., JNTU Kakinada – 533 003. Ph : 0884-3204466, 2300823 (O)	University College of Engg., JNTU Kakinada - 533 003
07.	KARIMNAGAR	<b>Smt. L. Sowbhagya Devi</b> , Principal, Govt. Degree & PG College for Women, Kashmirgadda, FCI Godown Road, Mankamma Thota, Karimnagar-505 001 Ph : 0878-2243562 (O)	Govt. Degree & PG College for Women Kashmirgadda, FCI Godown Road, Mankamma Thota, Karimnagar-505 001
08.	KHAMMAM	<b>Dr. S. Radhakrishna</b> , Principal, University P.G.College (KU), Ellandu Cross Road, Khammam – 507 002 Ph : 08742-223815 (O)	University P.G.College (KU) Ellandu Cross Road, Khammam – 507 002
09.	KURNOOL	<b>Dr. B. Srinivasa Reddy</b> , Principal, GPR Engg. College (Autonomous), Nandyala Road, Kurnool – 518 002. Ph : 08518-270957 (O)	GPR Engg. College (Autonomous) Nandyala Road, Kurnool – 518 002
10.	MACHILIPATNAM	<b>Dr. A.R.K. Murthy</b> , Principal, The Hindu College, Machilipatnam, Krishna (Dist.) – 521 001 Ph : 08672-222862 (O)	The Hindu College, Machilipatnam, Krishna (Dist.) – 521 001
11.	MAHABOONAGAR	<b>Sri A. Ravindra Babu</b> , Principal, Govt. Polytechnic, Mahaboob Nagar – 509 001 Ph : 08542-275072 (O)	Govt. Polytechnic Mahaboob Nagar – 509 001
12.	MEDAK	<b>Sri K. Ramulu</b> , Principal, Govt. Polytechnic for Women, Medak - 502 110 Ph : 08452-221493	Govt. Polytechnic for Women, Medak - 502 110
13.	NALGONDA	<b>Dr. K. Bapujee</b> , Principal, NG Govt. Degree College, Nalgonda - 508 001 Ph : 08682-222453 (O)	NG Govt. Degree College Nalgonda - 508 001
14.	NELLORE	<b>Sri A. Nirmala Kumar Priya</b> , Principal, Govt. Polytechnic for Boys, Venkateswarapuram, Nellore - 524 005. Ph : 08622-250904 (O)	Govt. Polytechnic for Boys, Venkateswarapuram, Nellore - 524 005
15.	NIZAMABAD	<b>Sri. K. Naresh Kumar</b> , Head Dept. of History, Girraj Govt. Degree College, Dubba, Nizamabad. – 503 002 Ph : 08462-220152 (O)	Girraj Govt. Degree College, Dubba, Nizamabad – 503 002
16.	ONGOLE	<b>Sri B.V. Sundara Kumar</b> , Principal, DA Govt. Polytechnic, Housing Board Colony, Ongole – 523 001 Ph : 08592-232705 (O)	DA Govt. Polytechnic, Housing Board Colony, Ongole – 523 001
17.	SRIKAKULAM	<b>Sri. B. Polisu</b> , Principal, Govt. Degree College (Men), Near Kodi Rama Murthi Stadium, Srikakulam-532001 Ph : 08942-222383 (O)	Govt. Degree College (Men) Near Kodi Rama Murthi Stadium, Srikakulam-532 001
18.	TIRUPATHI	<b>Dr. M. M. Naidu</b> , Principal, S.V.U.College of Engg., Tirupathi – 517 502. Ph : 0877-2289261, 2289341 (O)	S.V.U.College of Engg., Tirupathi – 517 502.
19.	VIJAYAWADA	<b>Dr. K. Mohan Rao</b> , Principal, V.R. Siddartha Engg. College, Kanur, Bandar Road, Vijayawada – 520 007. Ph : 0866-2582333, 2582334	V.R. Siddartha Engg. College, Kanur, Bandar Road, Vijayawada – 520 007
20.	VIKARABAD	<b>Dr. T. Veeraiah</b> , Principal, SAP College, Vikarabad - 501 101, R.R.(Dist.). Ph : 08416-252073	SAP College, Vikarabad - 501 101, R.R.(Dist.).
21.	VISAKHAPANTAM	<b>Prof. K. Venkata Subbaiah</b> , Prof. of Mechanical Engineering, AU College of Engg., University Campus, Andhra University, Visakhapatnam – 530 003 Ph :0891-2844813 (O)	AU College of Engg., University Campus, Andhra University, Visakhapatnam – 530 003.
22.	VIZIANAGARAM	<b>Dr. P. Ravindranadh</b> Vice-Principal (Academic), MVGR College of Engg., Chintalavalasa, Vizianagaram - 535 005 Ph : 08922-241014, 241199 (O)	MVGR College of Engg., Chintalavalasa Vizianagaram-535 005.
23.	WARANGAL	<b>Dr. ANR Lakshmi</b> , Prof. & HOD of Physiology & Vice-Principal, (Acad)Kakatiya Medical College Warangal – 506 004 Ph : 0870-2446898 Extn:219 (O)	Kakatiya Medical College Warangal – 506 004.
24.	HYDERABAD	<b>Dr. A.Govardhan</b> , Chief Regional Coordinator, EAMCET – 2010, Examinations Building, Ground Floor, JNT University Hyderabad, Kukatpally, Hyderabad – 500 085 Ph : 040-23156660,23150462,23150362	EAMCET –2010 Office, Examinations Building, Ground Floor, JNT University Hyderabad, Kukatpally
25.	HYDERABAD	<b>Dr. N.V. Ramana Rao</b> , Convener, EAMCET – 2010, Examinations Building, Ground Floor, JNT University Hyderabad, Kukatpally, Hyderabad – 500 085 Ph : 040-23156660,23150462,23150362	Hyderabad – 500 085.

- Note :**
1. The Convener reserves the right to add or delete some centres from the list of Regional Centres notified.
  2. The Convener reserves the right to allot the candidates to any regional centre other than that opted by the candidates.
  3. 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 – 2010

There are two ways to submit the EAMCET-2010 application : (1) Online Submission and (2) Offline Submission

**Attested copies of the following documents must be submitted either in online or offline submission.**

(a) Hall ticket of qualifying examination, (b) Marks memos of qualifying examination if already passed, (c) Caste certificate in case of SC/ST/BC candidates, (d) Certificate of Proof of Age, (e) Study or Residence or Relevant certificate for proof of local status.

##### Online submission:

For online submission a candidate has to purchase a DD for Rs. 250/- in favour of Secretary, A.P. State Council of Higher Education, Hyderabad, payable at Hyderabad and enter the website <http://www.apeamcet.org> and submit the application duly incorporating a scanned photograph and signature. After submission a registered number for future reference is generated. The candidate has to download and take print out of filled in application. Arrange the application along with requisite enclosures as mentioned above and DD in A4 size cover and send it to the Convener, EAMCET-2010, Examinations Building, Ground Floor, J.N.T. University Hyderabad, Kukatpally, Hyderabad - 500 085 by Regd. Post, so as to reach on or before 5.00 PM on 03-04-2010 without late fee. Those who are submitting the application in online after 03-04-2010 must send a D.D. (Rs.250/- for application cost + late fee) in favour of Secretary, A.P. State Council of Higher Education, Hyderabad. The details of D.D. should be mentioned on the top of envelope. For further details regarding online submission visit the website <http://www.apeamcet.org>. The registration number should be used for any further correspondence till the hall ticket is issued.

##### Offline submission:

1. The application for EAMCET-2010 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"**.
2. The filled in application form along with requisite enclosures as mentioned above for the entrance test should 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-2010**, Examinations Building, Ground Floor, **J.N.T. University Hyderabad, Kukatpally, Hyderabad - 500 085** so as to reach on or before 5.00 PM on 03-04-2010 without late fee. Candidates sending their application by post, should indicate the **Name of the Regional Centre** on the envelope. Those who are submitting the application after 03.04.2010 must send a D.D. for late fee in favour of Secretary, A.P. State Council of Higher Education, Payable at Hyderabad. The details of D.D. should be mentioned in the space provided on the top of envelope.
3. The candidates are advised to preserve the acknowledgement card. Quote the registration/application number for all future correspondence.
4. The candidates are advised to go through the website <http://www.apeamcet.org> for allotment of regional centre as opted in the application form. The candidates can collect their hall tickets in person from 30-04-2010 to 06-05-2010 (on all days) between **10.00 AM and 5.00 PM** by showing the acknowledgement card, at the respective Regional Centre. The hall tickets which are not collected by the candidates will be posted after 06.05.2010.

**IX. Mere appearance and qualifying at EAMCET-2010 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 – 2010

The qualifying percentage of marks in the Entrance Test is 25% i.e. 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-2010 RESULTS

1. **Evaluation:** Every care will be taken to avoid errors in the evaluation, checking, scrutiny, tabulation and ranking. Request for verification of OMR response sheet shall be entertained on payment of Rs. 500/- (Rs.200/- in case of SC/ST candidates) after the issue of public notification. However, if a candidate desires to have a photo copy of his/her OMR response sheet shall also be entertained on payment of Rs. 1000/- (Rs.400/- in case of SC/ST candidates). Any claim for personal identification of OMR response sheet is not permitted.
2. **Ranking:**
  - a. Candidates shall be ranked in the order of merit as explained in the Annexure-IV
  - b. Rank obtained in EAMCET-2010 is valid for admission to the courses mentioned in the application form, for the academic year 2010-2011 only.
  - c. Rank card will be posted to the candidate's address as given in the application form.
  - d. Rank obtained with the benefit of relaxation of the minimum qualifying marks at EAMCET-2010 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 University / Institution.

**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 for admission purpose on payment of Rs. 100/- each in the form of D.D on any nationalized bank payable at Hyderabad in favour of the Convener, EAMCET - 2010.**

**XIII. Any malpractice in EAMCET-2010 will be dealt with as per rules in force vide G.O.Ms.No: 114, Edn / (IE ) Dt: 13th May 1997 for the CET.**

**XIV. The answer scripts of EAMCET-2010 will be preserved for six months from the date of publication of results after which they shall be disposed off.**

**XV. In any litigation concerning EAMCET-2010 Test, Convener is the person to sue and be sued. The Convener (Examination), EAMCET – 2010 is not responsible for allotment of seats at the time of admissions. The Commissioner of Technical Education, Andhra Pradesh is the Convener for the admissions.**

**XVI. Any litigation concerning EAMCET-2010 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 the Convener, EAMCET-2010 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 <http://www.apeamcet.org>. However the candidate need to surrender the downloaded hall ticket in the test centre

#### XVIII. COUNSELLING AND ALLOTMENT OF SEATS

The list of institutions for allotment of candidates with intake in each discipline and category, as per reservations through EAMCET – 2010 would be released in the **Information Booklet** for Counseling in due course and the same information would also be released on website [www.apsche.org](http://www.apsche.org).

**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  
FORM III**

Serial No. \_\_\_\_\_

S.C. \_\_\_\_\_

S.T. \_\_\_\_\_

B.C. \_\_\_\_\_

Certificate No.: \_\_\_\_\_

Emblem \_\_\_\_\_

District Code : \_\_\_\_\_

Mandal Code : \_\_\_\_\_

Village Code : \_\_\_\_\_

**COMMUNITY, NATIVITY AND DATE OF BIRTH CERTIFICATE  
(Integrated Community Certificate)**

- 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.
- It is certified that Sri / Smt. / Kum. \_\_\_\_\_  
is a native of \_\_\_\_\_ District of Andhra Pradesh.
- It is certified that the place of birth of Sri / Smt. / Kum. \_\_\_\_\_ Village / Town \_\_\_\_\_  
Mandal \_\_\_\_\_ District of Andhra Pradesh
- 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 :

Name in Capital letters :

Designation :

(Seal)

**Explanatory Note :**

- 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 APPLICATION**

- It is hereby certified:
  - 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).
  - 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	Mandal	District
1				
2				
3				
4				
5				
6				
7				

- 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)

CERTIFICATES IN SUPPORT OF NON-LOCAL STATUS FOR E 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 B.V.Sc & A.H. / B.Sc.(Ag) / B.Sc.(Hort) / B.F.Sc. / B.Tech.(FS&T) / B.Sc. (CA & BM) / MBBS / BDS / BAMS / BHMS / BNYS. B.Pharmacy / B.Tech. (BT) / Pharm-D . of 2010-2011, 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:

Signature of the competent  
authority from Revenue Dep

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 B.V.Sc & A.H. / B.Sc.(Ag) / B.Sc.(Hort) / B.F.Sc. / B.Tech.(FS&T) / B.Sc. (CA & BM) / MBBS / BDS / BAMS / BHMS / BNYS. B.Pharmacy / B.Tech. (BT) / Pharm-D . of 2010-2011, 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:

Signature of the competent  
authority from Revenue Dep

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 of \_\_\_\_\_  
a candidate for B.V.Sc & A.H. / B.Sc.(Ag) / B.Sc.(Hort) / B.F.Sc. / B.Tech.(FS&T) / B.Sc. (CA & BM) / MBBS / BDS / BAMS / BHMS / BNYS. B.Pharmacy / B.Tech. (BT) / Pharm-D . of 2010-2011, 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 the Issuing Authority  
Designation:

Office Seal:

ANNEXURE - I

Subject: BOTANY

- I. **INTRODUCTION:** Origin, development and scope of Botany - Classification of plant kingdom - Branches of Botany: Morphology, Cytology, Embryology, Palynology, Taxonomy, Physiology, Ecology, Palaeobotany, Genetics, Phytogeography, Phycology, Mycology, Lichenology, Bryology, Pteridology, Microbiology, Bacteriology, Virology - Parts of angiospermic plant
- II. **EXTERNAL MORPHOLOGY:** (a)**Vegetative morphology:** Root: Root system; Types, Functions, Modification of roots (Velamen roots, Photosynthetic roots, Respiratory roots, Parasitic roots, Storage roots and nodular roots) - Stem: characteristics and functions of the stem; Modifications of stem: Aerial: Tendril, Thorn, Hook, Phylloclade, Restiratory roots, Tuberous stem and Bulbil; Sub-aerial: Runner, Stolon, Sucker & Offset, Underground: Rhizome, Corm, Stem tuber & Bulb - Leaf: Parts of Leaf, Types, Functions and Parts of leaves, Venation, Phyllotaxy, Leaf modifications: - tendrils, spines, scale leaves, phyllode, reproductive & trap leaves. (b)**Reproductive morphology:** Inflorescence: Introduction, Types of Inflorescence - Racemose, Cymose and Special Types Flower: Parts of a typical flower: Structure, Sex distribution and symmetry of flower, position of gynoecium. Detailed description of flower: Prianth, Calyx, Corolla, aestivation, Androecium - Parts, fixation and dehiscence of anther, length of stamens, union of stamens, Gynoecium - number of carpels, fusion of carpels, ovary - number of locules , placentation, types of styles, Stigma
- III. **REPRODUCTION IN ANGIOSPERMS:** Introduction - Sporophytic and Gametophytic stages - Structure of an Anther; Microsporogenesis, Structure of a pollen grain and development of male gametophyte Ovule - Structure and Types; megasporogenesis - development and structure of embryosac - Pollination: Types of pollination, self and cross-pollination, contrivances for cross pollination and self pollination, agents of cross pollination. Fertilization - Process, Post - fertilization changes; Seed structure (Dicot & Monocot), and seed germination (epigeal, hypogeal & vivipary) - Fruits: Classification; False fruits and true fruits - Simple fruits (fleshy fruits - berry, pome, pepo, hesperidium, drupe; Dry fruits - dehiscent- legume, septicidal capsule, septifragal capsule, loculicidal capsule; Indehiscent fruits - caryopsis, cypsela, nut; schizocarpic - lomentum, schizocarp); Aggregate and Multiple fruits
- IV. **PLANT TAXONOMY:** Introduction - Alpha and Omega taxonomy; Aspects of taxonomy - Identification - Flora, herbaria, botanical gardens (RBG - Kew, IBG - Kolkata, NBG - Lucknow); Nomenclature, Classification - Types, Units and a brief account of Bentham & Hooker's system. Study of the following families - Malvaceae - Fabaceae - Solanaceae - Liliaceae.

- V. CELL BIOLOGY:** Introduction, Techniques of Cell Biology – microscopy (light, electron, fluorescent, phase contrast, SEM, TEM – only uses), Separation techniques - Ultrastructure of plant cell (Eukaryotic cell - Structure of cell wall and cell membrane, Protoplasm, cytoplasm, Plastids, mitochondria, endoplasmic reticulum, ribosomes, golgi complex, lysosomes, peroxisomes and glyoxysomes, vacuoles and Nucleus). - Chromosomes - Introduction, structure (light microscopic study), classification, functions and nucleosome model) - Nucleic acids - Cell Division : Cell Cycle, Mitosis and Meiosis
- VI. INTERNAL ORGANIZATION OF PLANTS:** Tissues – Types (Meristematic and Permanent ) and functions -Internal structure of Dicot root (Primary) and Monocot root - Internal structure of Dicot stem (Primary) and Monocot stem - Internal structure of leaf (Dicot and Monocot) - Secondary growth in dicot stem.
- VII. PLANT ECOLOGY:** Introduction - Plant communities – Hydrophytes, Mesophytes and Xerophytes; Ecological adaptations (Morphological & Anatomical) of Hydrophytes and Xerophytes.
- VIII GENETICS:** Introduction - Mendel's Principles – Monohybrid and Dihybrid cross, Back cross and Test cross, Concept of probability in relation to Genetics - Linkage and crossing over - Mutations.
- IX. PLANT KINGDOM:** Introduction - Spirogyra – distribution and habitat, thallus structure, cell structure, reproduction– vegetative, asexual, sexual, life cycle - Rhizopus – distribution and habitat, structure of mycelium and hypha, reproduction – vegetative, asexual, sexual, life cycle, sexuality in Rhizopus - Funaria: distribution and habitat, external morphology of the gametophore, anatomy of the stem, reproduction – vegetative and sexual, sporophyte, protonema, life cycle - Pteris: distribution and habitat, Morphology of the sporophyte, anatomy of the Rhizome, vegetative, asexual and sexual reproduction, Embryo, life cycle - Cycas: distribution and habitat, Morphology of the sporophyte, anatomy of the coralloid root and leaflet, Reproduction, Embryo, Seed, life cycle.
- X. MICROBIOLOGY:** Introduction and importance of microbiology - Bacteria – Discovery, Distribution, sizes, shapes, Gram stain (in brief), structure of cell, nutrition, reproduction –asexual (binary fission), sexual – Conjugation (F<sup>+</sup> and F<sup>-</sup> only), transformation and transduction (only definition, discoverer and example for transformation and transduction), economic importance – beneficial (Agriculture, Industry, Medicine, Biotechnology), harmful (spoilage of food, plants, human and animal diseases) - Viruses – historical account, types, structure (TMV and T<sub>4</sub> details), general account of sizes, shapes, replication (Lytic and Lysogenic cycles). Plant diseases caused by viruses, transmission of viruses and control of viral diseases.
- XI. PLANT PHYSIOLOGY : Introduction (a) WATER RELATIONS OF PLANTS:** Absorption of water – Introduction, soil water, water potential, Diffusion, Imbibition, Osmosis, Plasmolysis, Mechanism of absorption of water- Ascent of Sap: Definition, Cohesion – Tension theory - Transpiration : Definition, SPAC and types of transpiration, mechanism of stomatal movement, factors, significance, Anti- transpirants. **(b) NUTRITION IN PLANTS:** Introduction, types of nutrition (symbiosis, parasitism, chemotrophism, autotrophism) - Mineral nutrition – Introduction, soil as source, criteria of essentiality, importance of macro and micro elements, ion absorption – passive and active (carrier concept), Biofertilizers **(c) METABOLISM:** Enzymes – introduction, properties, IUB classification, mechanism of enzyme action (lock & key theory), enzyme inhibition - Photosynthesis - Definition, pigments, structural organization of chloroplast, Mechanism of Photosynthesis – Light reactions - Hill reaction, Emerson's Enhancement Effect, PSI and PSII, electron transport and proton translocation, photophosphorylation, Carbon assimilation - C<sub>3</sub>, C<sub>4</sub> pathways, Factors, Photorespiration, Blackman's law - Respiration – definition, Types, Mechanism of aerobic and anaerobic respiration, Alcohol fermentation, Respiratory quotient (R.Q). Nitrogen metabolism: Nitrogen cycle, Biological nitrogen fixation (Symbiotic, Non-symbiotic); Genetic code, Biosynthesis of Proteins - Plant growth & its regulators: Growth curve; introduction to growth regulators, physiological effects and applications-Auxins, Gibberellins, Cytokinins, Abscisic acid and Ethylene; Photoperiodism and Vernalization.
- XII. PLANTS AND HUMAN WELFARE:** Crop improvement – Introduction , aims and objectives of plant breeding; methods – definition, methodology, advantages and achievements of Introduction, Selection (Mass, Pureline, Clonal), Hybridization, Heterosis, Mutation breeding and Polyploidy breeding. Biotechnology: Introduction, Definition, Scope and applications of Biotechnology - Genetic Engineering - Recombinant DNA Technology, Genetically Modified Crops, Transgenic plants, Biosafety issues, applications of Genetic Engineering - Tissue Culture – techniques and Applications - Single cell proteins – Advantages and Sources - Mushroom Cultivation: Morphology and types of mushrooms; Food value; cultivation of white button mushrooms.

**Subject: ZOOLOGY**

- I. Zoology – The Basics:** Nature and scope of Zoology, Areas of study under zoology, relationship between zoology and other sciences, basic principles of classification, need for classification, nomenclature, levels of classification or systematic hierarchy, species concept, outline classification of the kingdom animalia.
- II. General characters and classifications-Invertebrate Phyla (upto the level of classes):** Protozoa-general characters and brief account of classification, Porifera – general characters & classification, Cnidaria – general characters and classification, Platyhelminthes – general characters and classification, Nematoda – general characters and classification, Annelida – general characters and classification, Arthropoda – general characters and classification, Mollusca – general characters and classification, Echinodermata – general characters and classification.
- III. Animal Organization:** Introduction, Multicellularity Diploblastic, triploblastic organization, Symmetry – types and characteristic features of each symmetry with examples i.e. Asymmetry, Radial Symmetry, Biradial symmetry Bilateral symmetry, Definition of Coelome, definitions and examples of acoelomates, pseudocoelomates and enterocoelomates, The structure of a generalized animal cell (brief account only), Animal Tissues (brief account) epithelial tissues, connective tissue proper, supporting tissue, fluid tissue, muscular tissue and nervous tissue.
- IV. Locomotion and Reproduction in Protozoa:** Locomotion – Introduction, locomotor organelles in Protozoans (pseudopodia, cilia, flagella) giving examples, Locomotion in Protozoans – amoeboid movement, Sol-gel theory, Ciliary and Flagellar movements synchronal and metachronal movements in Paramecium, Effective & Recovery strokes, Reproduction in Protozoa, Types of Reproduction (i) Asexual reproduction types – Transverse binary fission in paramecium, longitudinal binary fission in Euglena (ii) Sexual reproduction in Protozoa Conjugation in Vorticella and its significance.
- V. Animal Associations:** Definition and examples of Mutualism, Symbiosis, Commensalism, Parasitism, Structure, life cycles, diseases and preventive measures of the following parasites (1) Entamoeba histolytica (structure, life cycle pathogenecity, prevention), (2) Plasmodium vivax (structure, life cycle pathogenecity, prevention), (3) Taenia solium (External characters body wall, organs in mature proglottid, fertilization Life-cycle-Pathogenecity) (4) Wuchereria bancrofti (structure, life cycle pathogenecity, prevention).
- VI. Phylum Annelida:** Pheretima posthuma – (1) Introduction, importance, different genera, species, habit & habitat. External characters – structure and arrangement of setae, (2) body wall coelom, wall of alimentary canal and locomotion, Pheretima (3) digestive system, Respiratory system, Pheretema : (4) Blood vascular system, (5) Excretory system, (6) Nervous system, (7) Reproductive system, (8) copulation, cocoon formation & development, Regeneration, economic importance.
- VII. Phylum : Arthropoda:** (1) Arthropoda – Introduction – Evolutionary characters of Arthropoda, (2) Cockroach, Periplaneta americana – external features, body wall, Endoskeleton, stink glands, coelom, fat bodies, locomotion, Cockroach – Digestive system, Respiratory system, Nervous system, sense organs, structure of ommatidium, (3) Mouth parts of insects, cockroach, Mosquito, Housefly, Butterfly, (4) Economic importance of insects (i) useful insects (ii) harmful insects.

- VIII. Man & Biosphere:** Elementary aspects of ecosystem, Abiotic factors light, temperature, water and their biological effects on organisms, Biotic factors: producers, consumers and decomposers - Functional aspects of ecosystem, food chains, food web, ecological pyramids, Lake as an example of fresh water ecosystem, population ecology – Population density, growth and growth curves - Biodiversity, conservation of biodiversity and wild life conservation.
- IX. Phylum – Chordata:** Characteristics of Chordata, Ancestry of Chordates, Outline classification of Chordata, Theories of origin of Chordata - General features of Sub-phylum Urochordata & Sub-phylum Cephalochordata - Sub-phylum Vertebrata : Pisces - General Characters, Classification with examples, Amphibia : General characters, Classification with examples.
- X. Reptilia – Aves & Mammalia:** Reptilia: General Characters, Classification of Chelonia, Rhynchocephalia, Squamata and Crocodilia with typical examples, Identification of poisonous and non poisonous snakes, poison apparatus, toxicity of snake venom and treatment of snake bite including first aid - Aves: Distinctive features, Classification, differences between Ratitae and carinatae with typical examples - Mammalia : Distinctive features of Prototheria, Metatheria & Eutheria with examples.
- XI. Rabbit – Functional Anatomy-I (Digestive System, Respiratory System & Circulatory System):** Classification and External characters of Rabbit - Digestive System, Alimentary Canal, Digestive Glands, Nutrition & Digestion, Process of Digestion, Role of Vitamins and Mineral in Nutrition, Nutritional requirements in relation to balanced diet - Respiratory system, Mechanism of breathing and transport of gases - Circulatory System, Structure of heart, Function of heart, Arterial system, Venous System, Blood Clotting.
- XII. Rabbit-Functional Anatomy-II (Musculo-Skeletal System, Excretory System, Reproductive System):** Musculo Skeletal System, Ultra Structure of Muscle fibre, sliding filament theory, Elementary idea of Axial skeleton and appendicular skeleton: Types of Joints. Excretory System, Excretory Organs, Structure of nephron in mammals, Formation and Composition of Urine, Micturition. Reproductive system: Male Reproductive system, Female Reproductive system, Copulation, Fertilization and Development, Placenta. Gestation period.
- XIII. Rabbit – Functional Anatomy-III (Nervous System, Endocrine Glands and their role in Human beings, Immunology):** Nervous System, Central, Peripheral and autonomous nervous systems Roman nomenclature of Cranial and Spinal nerves and their functions. Generation and Propagation of Nerve Impulse, Endocrine System: Endocrine glands and Role of Hormones. Endocrine disorders in Human beings. Immunology : Types of Immunity, Organs of Immune system, Cells of Immune systems, Soluble mediators of Immunity. Antigens, Mechanism of Humoral and cell mediated Immunities, Immunological disorders: AIDS, Hepatitis.
- XIV. Genetics-Introduction:** Multiple alleles and Blood groups, ABO Blood groups, Rh antigens, Sex determination, Sex Chromosomes, Heterogametic sex determination, Sex determination in Drosophila, Sex determination and Sexual differentiation in human being, Haplodiploidy in honey bee, Effects of environment on sex determination, Hormonal control of sex determination, Sex linked inheritance, Sex linkage in drosophila, Genes on the sex chromosomes, Sex linked characters in human beings, X-linked characters, Y-linked characters, X-Y linked character, Sex limited characters, Sex influenced characters. - Gene Expression and regulation, Genetic Materials, Function of Genes, Gene regulation in prokaryotes, Gene expression in eukaryotes, concepts of Gene action one gene one poly peptide concept only - Basic concepts of animal breeding, System of breeding, Heterosis, Progeny Test, Cloning, Transgenic animals. Genome and Human genome project, Gene Mapping, D.N.A. finger printing, An elementary idea of gene therapy.
- XV. Organic Evolution:** Evolutionary concepts and origin of life, Experimental verification of chemical origin of life. Theories of Evolution : Lamarkism or Inheritance of acquired characters, Darwinism or Natural Selection, Sexual selection, Artificial selection, Mutation theory of evolution, Synthetic theory of evolution or Neo-Darwinism : Hardy-Weinberg equilibrium and evolutionary process – Natural selection, Genetic load, Genetic Drift, Changes in Genotype frequencies and Speciation.
- XVI. Applied Biology:** Aquaculture: List of animals of aquaculture importance, Fisheries – fish culture and rearing methods. Poultry : Introduction to Poultry, Poultry farming, Poultry diseases - Biotechnology : Recombinant D.N.A. technology, Industrial use of micro organisms and DNA Technology, Vaccines, Enzymes, hormones, Interferons Monoclonal anti bodies. - Cell cycle and its regulation, cancer biology, stem cells - Bio medical technology : X-ray radiography, Definitions of Magnetic Resonance Imaging (MRI), Electro Cardiography (ECG), Electro Encephalography (EEG), Transplantation, ELISA (Enzyme linked immunosorbent assay).

### Subject – PHYSICS

**I - MEASUREMENTS, UNITS AND DIMENSIONS :** Introduction- units and Dimensions, Accuracy, precision of measuring instruments, Constant errors, systematic errors, environmental errors (errors due to external causes). Error due to imperfection, Random errors, Gross Errors, Absolute Errors, Relative percentage errors, Errors due to addition, subtraction, multiplication, division, powers of observed quantities, Significant figures, Fundamental and derived physical quantities / System of Units, definition of units in SI. Multiple and submultiples of SI units, Dimensional formulae and dimensional equations, dimensional constants and dimensionless quantities. Principle of homogeneity of dimensions, Conversion of one system of units into another, to check correctness of an equation, to derive the relationship between different physical quantities.

**II - ELEMENTS OF VECTORS :** Physical quantities, geometrical representation of vectors, addition of vectors, equality of vectors, Resolution of a vector into components, null vector, unit vector in Cartesian co-ordinate system, position vector and its magnitude, Parallelogram law of addition of vectors, Derivation of expression for the resultant vector, The direction of the resultant, Special cases, Triangle law and polygon law of vectors, triangle law of addition of vectors, polygon law of addition of vectors, concept of relative velocity, application to relative motion of a boat in a river, motion of a boat across a river, shortest path, shortest time, Multiplication of vector with a scalar, product of two vectors, scalar product or dot product of two vectors, properties of scalar product, examples of scalar product, work done and energy, vector product of two vectors, properties of vector product of two vectors, torque, angular momentum.

**III - Kinematics :** Introduction- Equations of motion, acceleration due to gravity, equations of motion of a freely falling body, Equations of motion of an object vertically projected upwards from the ground, Maximum height (H), Time of ascent, time of descent, velocity of the body on returning to the point of projection, Vertical projection of an object from a tower, Projectiles – oblique projection from ground, equation of trajectory, maximum height, time of ascent, time of flight, horizontal range, two angles of projection for the same range, velocity of projection at any instant, horizontal projection from the top of a tower, equation of trajectory, time of descent, range, velocity of the projectile (at any instant).

**IV - DYNAMICS :** Introduction- Newton's laws of motion, applications of Newton's laws. Objects suspended by strings, Atwood machine, blocks placed in contact with each other on frictionless horizontal surface, apparent weight in a lift, Impulse, law of conservation of linear momentum, conservation of linear momentum during collision, work, power, energy, KE&PE definition and derivation for both, Relation between KE and Linear momentum, conservation and non-conservation of energy in case of freely falling body and vertically projected body.

**V -COLLISIONS:** Introduction – Elastic and inelastic collisions, Collisions in one dimension (Elastic collision only), body at rest, bodies moving on along in same direction and opposite directions, Co-efficient of restitution, definition, equation for height attained for freely falling body after number of rebounds on floor.

**VI-CENTRE OF MASS (CM):** Introduction- Centre of mass, difference between centre of mass and centre of gravity, co-ordinates of centre of mass, center of mass of system of particles in space, motion of centre of mass (Velocity and acceleration of CM), characteristics of centre of mass, laws of motion of the centre of mass, velocity and acceleration, explosion.

**VII – FRICTION:** Introduction - cause of friction, advantages of friction, disadvantages of friction, methods of reducing friction, types of friction, static friction, kinetic (or) dynamic friction, rolling friction, Distinction between static and dynamic friction. Normal reaction, laws of friction, static friction, kinetic friction or Dynamic friction, Rolling friction, Angle of friction, motion of body on rough horizontal plane, motion of bodies on an inclined plane, Body at rest on the plane-Angle of repose-when the body is just ready to slide, when the body is sliding down. Motion of a body on smooth inclined plane, body sliding down the plane, body sliding up the plane, pushing and pulling of a lawn roller. A lawn roller on a horizontal surface pulled by an inclined force, a roller on horizontal surface pushed by an inclined force.

**VIII - ROTATORY MOTION:** Couple (concepts, units, dimensional formula and examples), Vector representation of torque, Moment of Inertia(MI), definition, units, parallel and perpendicular axes theorems. Expressions for MI of a thin rod, uniform disc, rectangular lamina, solid and hollow spheres, circular ring and cylinder (no derivations needed), angular momentum, relation between angular momentum and torque, law of conservation of angular momentum with examples, Motion in vertical circle.

**IX- GRAVITATION:** Introduction- Basic forces in nature, Nature of gravitation, law of universal gravitation, Relation between Universal gravitational constant (G) and acceleration due to gravity (g), variation of 'g' with altitude, depth, latitude and shape of the earth, characteristics of gravitational force, limitations of Newton's third law, gravitational field, field strength, properties of gravitational fields, Origin of black holes, Chandrashekar limit, neutron star, Frames of reference, Inertial and Non- Inertial frames, Inertial and Gravitational mass & relation between them, Principle of equivalence, Escape and Orbital velocities, definition, derivation of expressions and relation between them, Geostationary satellites and their uses.

**X- SIMPLE HARMONIC MOTION (SHM):** Introduction- simple harmonic motion examples, SHM explanation by reference circle, expression for displacement, amplitude, velocity, acceleration, time period, frequency, phase, initial phase (epoch) - Simple pendulum, expression for time period, loaded spring, expression for time period, force constant, PE and KE of simple harmonic oscillator, Total Energy of Simple Harmonic Oscillator, Law of conservation of energy in the case of a simple pendulum.

**XI- ELASTICITY:** Introduction- Elasticity and plasticity, stress, strain, Hook's law, Moduli of elasticity, Poisson's ratio, definition and its limit, Behavior of a wire under gradually increasing load- Elastic fatigue, strain energy - experimental determination of Young's modulus of wire.

**XII- TEMPERATURE AND THERMAL EXPANSION OF MATERIALS:** Introduction- concept of temperature, Measurement of temperature, Fahrenheit, Centigrade scales of temperature, their relation (only formulae)- Different types of thermometers (brief theoretical description). Vibration of atoms in a solid, PE curve, Anharmonicity of vibrations, explanation for expansion in solids. Coefficients of linear, areal and cubical expansion, definitions, Expressions & Relation between these coefficients of expansions, change of density with temperature, examples in daily life.

Introduction- coefficients of real and apparent expansion of liquids, relation between them with derivation, Determination of coefficient of apparent expansion of liquids by specific gravity method, Anomalous expansion of water, its significance in nature.

Introduction - volume and pressure coefficients of gases, relation between them and derivation. Determination of volume coefficient-Regnault's method. Determination of pressure coefficient-Jolly's bulb method. Kelvin scale of temperature, Boyle's and Charle's laws. Ideal gas equation, derivation, significance of Universal gas constant.

**XIII- THERMO-DYNAMICS:** Introduction - Quasistatic and cyclic process, reversible and irreversible processes, Heat and Temperature, Zeroth law of Thermodynamics, definition of Calorie, Joule's law and mechanical equivalent of heat, Internal energy, First law of thermodynamics, equation and explanation. Heat capacity, specific heat, experimental determination of specific heat by the method of mixtures. Specific heats of a gas ( $C_p$  and  $C_v$ ), External work done by a gas during its expansion. Relation between  $C_p$  and  $C_v$  derivation, Isothermal and adiabatic processes. Relation between P, V and T in these processes. Expression for work done in Isothermal process (no derivation), expression of work done in adiabatic process (no derivation). Heat engines and refrigerators (only qualitative treatment). Three phases of matter, Triple point – Triple point of water. Latent heat, Determination of latent heat of vaporization of water, Second law of thermodynamics – different statements.

**XIV- TRANSMISSION OF HEAT:** Introduction - conduction of heat, coefficient of thermal conductivity, convection- Type of convections, Nature and properties of Thermal radiation, Prevost's theory of heat exchange - emission power and absorptive power - Black body radiation, Kirchoff's law and its applications – Stefan's law – Newton's law of cooling.

**XV - SURFACE TENSION:** Introduction - surface tension, definition - Examples, molecular theory of surface tension. Surface energy, Angle of contact, capillarity-examples in daily life, Determination of surface tension, capillary rise method – theory and experiment. Effect of temperature on surface tension, excess pressure in liquid drops and soap bubbles.

**XVI- FLUID MACHANICS:** Introduction - Principle of Buoyancy- pressure in a fluid - Streamline flow – Bernoulli's theorem - equation with derivation – applications-aerodynamic lift, motion of a spinning ball, Illustrations of Bernoulli's theorem. Viscosity – explanation coefficient of viscosity effect of temperature on viscosity, Poiseuille's equation, Motion of objects through fluids. Stokes formula, net force on the object, terminal velocity.

**XVII- WAVE MOTION:** Longitudinal and transverse waves, Equation for a progressive wave, principle of superposition of waves, reflection of waves, Formation of waves on a stretched string, laws of vibrating strings, experimental verification by Sonometer, Sound: Characteristics of sound, speed of sound in solids, liquids and gases (only formula to be given), Forced Vibrations, Free Vibrations, Resonance with examples, standing waves in Organ Pipes, Open Pipes, Closed Pipes, Fundamental frequency-Overtones, Harmonics, definition and explanation, Beats definition and its importance. Doppler Effect, Definition, derivation of relation for apparent frequency of a sound note emitted by a source for the cases a) only source is moving, b) only listener is moving, c) both source and listener are moving. Applications and limitations of Doppler Effect- Echoes, Absorption of sound waves, Reverberation – Reverberation Time, Fundamentals of building Acoustics – Statement of Sabine's Law.

**XVIII- OPTICS:** Nature of Light, Newton's corpuscular Theory, Huygen's Wave Theory- Electromagnetic spectrum. Huygen's Explanation of Reflection and Refraction of plane waves at a plane surface. Refraction through prism, Derivation of Refractive index of material of prism for minimum deviation, critical angle, Total Internal Reflection, Relation between Critical angle and Refractive Index, application of total internal reflection to Optical fibers. Defects in Images: Spherical and Chromatic aberrations and reducing these defects, Different methods (qualitative treatment). Optical Instruments: Microscope, Telescope, Formula for magnification of Microscope, Astronomical and Terrestrial Telescopes. Construction of Ramsden's and Huygen's eye pieces with ray diagrams. Dispersion of light, dispersive power, pure and impure spectra, condition for obtaining pure spectrum, different kinds of spectra– Emission spectra, Line, Band and continuous spectra, absorption spectra, Fraunhofer lines and their significance.

**XIX- PHYSICAL OPTICS:** Interference – condition for interference, Young's double slit experiment – Derivation for Intensity and fringe width – Uses of interference, Diffraction: Fresnel and Fraunhofer diffraction (Qualitative only). Polarisation: Concepts of Polarisation. Plane Polarisation of Light by Reflection, Refraction and Double Refraction (Polaroids).

**XX- MAGNETISM:** Coulomb's Inverse Square Law, Definition of Magnetic Field, Magnetic Lines of Force- Uniform and Non – Uniform Magnetic Fields. Couple acting on a bar magnet placed in a uniform magnetic field, Definition of magnetic moment of magnet. Magnetic Induction due to a bar magnet on axial and equatorial lines. Superposition of magnetic fields, Tangent Law, Deflection Magnetometer. Comparison of Magnetic Moments in Tan A, Tan B positions by equal distance method and Null Method, Verification of Inverse Square Law. Vibration Magnetometer- Principle and Description, Experimental determination of M and  $B_H$  (earth's horizontal component) using Vibration Magnetometer. Types of magnetic materials – Para, Dia, and Ferro Magnetism – Definition and properties.

**XXI- ELECTROSTATICS:** Charges – conservation of charge and additive property of charges. Coulomb's Law : Permittivity of Free Space and Permittivity of Medium, Force between two point charges. Force due to multiple charges – Principle of superposition with examples. Electric field, Electric lines of force, their properties, Electric field intensity definition, electric intensity due to isolated charge and due to multiple charges. Electrostatic Potential, Definition of Electrostatic Potential in an electric field- Potential due to single charge and multiple charges, Electrostatic potential energy- Relation between electrostatic potential and electric intensity.

Electric Flux & Gauss Law: Electric Flux Definition, Gauss Law-Statement of Gauss Law, Application of Gauss Law to find electric intensity and electrostatic Potential due to continuous charge distribution of Infinite Long wire, Infinite Plane Sheet and Spherical Shell. Capacitance, Definition of Electrical Capacity of a Conductor, Capacitance, Dielectric constant, Definition of Condenser, its uses, Parallel plate Condenser, Formula for Capacitance of Parallel Plate Condenser, Dielectric, Dielectric Strength, Effect of dielectric on capacitance of capacitor. Capacitors in series and in parallel: derivation of the equivalent capacitance for the above cases. Energy stored in a Condenser, Effect of dielectric on Energy of Condenser, Types of capacitors, their uses.

**XXII- CURRENT ELECTRICITY:** Electric current – Flow of Electric charges in a metallic conductor, Drift velocity and mobility, Relation between electric current and drift velocity. Ohm's Law: Statement, Ohmic and Non-Ohmic elements with examples, Conductance, Specific resistance, Variation of resistivity with temperature, Variation of Resistance with temperature, Thermistor. E.M.F. of Cell – Internal resistance and back E.M.F., Difference between EMF of a Cell and potential difference. Electrical energy, Power definition of kWh. Kirchhoff's laws: Statement of Kirchhoff's voltage law, Kirchhoff's current law, their application to Wheatstone bridge, condition for balancing, Meter bridge, Determination of resistance of a conductor using meter bridge. Principle of Potentiometer-determination of internal resistance and E.M.F. of a cell using potentiometer. Series and parallel combination of cells – Derivation of equivalent EMF for the above cases.

**XXIII- THERMOELECTRICITY:** Introduction- Seebeck effect, Peltier and Thomson effects and their coefficients. Variation of thermo EMF with temperature, Neutral and Inversion Temperatures. Applications of Thermo- Couple.

**XXIV- ELECTROMAGNETICS:** Oersted's Experiment, Biot – Savart Law, Ampere's Law, Magnetic field near a long straight wire and magnetic field at the Center of a circular coil carrying current (with derivations). Field on the axis of circular coil carrying current (expression only). Tangent Galvanometer (TG), Principle and working, Definition of Reduction Factor. Force on a moving charge in a magnetic field, Force on a current carrying conductor placed in a magnetic field, Force between two long straight parallel conductors carrying current, Definition of Ampere, Fleming's Left Hand Rule, Current loop as a magnetic dipole, force and Torque on Current loop in a uniform magnetic field, magnetic dipole moment of a revolving electron. Principle, Construction and working of Moving Coil Galvanometer (MCG), Converting MCG into ammeter and voltmeter, comparison of MCG with TG. Electromagnetic induction, Magnetic Flux, Induced EMF, Faraday's and Lenz's Laws. Fleming's Right Hand Rule, Self Inductance, Mutual Inductance, Principle of Transformer. Growth & decay of current in L-R circuit with DC source, Growth and decay of charge in R.C. Circuit connected to DC source, Equations for charge on condenser – Current in inductor, Time constant, Definition and its significance. Alternating current (A.C), Introduction – Instantaneous, maximum and RMS value of A.C. current, Alternating Voltage applied to a pure resistor, pure inductor, pure capacitor, AC through C-R, L-R and L-C-R series circuits.

**XXV ATOMIC PHYSICS:** Discovery of electron,  $e/m$  of electron by Thomson's method, Charge of the electron by Millikan's Oil Drop Method (Principle Only). Photo Electric Effect : Definition, Laws of Photoelectric Emission, Einstein's explanation of Photoelectric effect, Einstein's Photo electric equation and its experimental verification by Millikan's method. Photo Electric Cells, working and uses. X- Rays- Production of X- Rays, Coolidge tube, X- ray spectrum, Continuous X- Ray Spectra, Characteristic X – Ray Spectra, Moseley's Law and its importance. Compton effect (Statement only), Dual nature of matter, de Broglie's hypothesis (concept only).

**XXVI NUCLEAR PHYSICS:** Composition and size of nucleus, mass defect and binding energy and their relation (Explanation with examples). Natural radio activity – alpha, beta and gamma radiations and their properties, radio active decay law, half life and average life of a radio active substance, Nuclear forces – Their Properties, Artificial Transmutation of elements, Discovery of Neutron, Radio Isotopes and their uses. Nuclear Fission, Chain Reaction, Principle and Working of a Nuclear Reactor, Nuclear Radiation Hazards, Protective shielding, Types of reactors – Breeder Reactor, Power Reactor and their uses. Nuclear Fusion, Energy of Sun and stars, Carbon – Nitrogen cycle and proton – proton cycle, Elementary particles.

**XXVII SEMI-CONDUCTOR DEVICES:** Introduction- Intrinsic and extrinsic semi conductors (n and p type). Junction diode, p -n junction, depletion layer and barrier potential, Forward and Reverse bias, and Current -voltage characteristics of junction diode, p –n Diode as half wave and full wave rectifier (only qualitative treatment), Zener Diode as a voltage regulator. Transistor Function of Emitter, Base and Collector, p-n-p and n-p-n Transistors, Biasing of Transistors, Current –Voltage Characteristics of Transistor in CE configuration, Transistor as common emitter amplifier (qualitative treatment), Logic Gates (OR, AND, NOT, NOR, NAND)

**XXVIII COMMUNICATION SYSTEMS:** Elements of communication systems (block diagram only), Bandwidth of signals (Speech, TV and digital data), bandwidth of Transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation, Modulation, Need for modulation.

**Subject: CHEMISTRY**

**I. ATOMIC STRUCTURE:** Characteristics of electron, proton and neutron. Rutherford model of an atom. Nature of electromagnetic radiation. Planck's quantum theory. Explanation of photo electric effect. Dual behavior of electromagnetic radiation. Features of atomic spectra – Emission and absorption spectra. Characteristics of hydrogen spectrum. Bohr's theory of the structure of the atom – Postulates. Bohr's theory of hydrogen atom, Energy of an electron. Bohr's explanation of spectral lines. Failure of Bohr's theory. Wave-particle nature of electron. de Broglie's hypothesis, Heisenberg's uncertainty principle. Important features of the quantum mechanical model of an atom – Meaning and significance of wave function. Quantum numbers, concept of orbitals, definition of atomic orbital in terms of quantum numbers - shapes of s, p and d orbitals, Aufbau principle, Pauli's exclusion principle and Hund's rule of maximum multiplicity. Electronic configuration of atoms. Explanation of stability of half filled and completely filled orbitals.

**II. CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES:** Concept of grouping elements in accordance to their properties –Mendeleef's Periodic Table. Periodic law – Mendeleef's classification of elements. Significance of atomic number and electronic configuration as the basis for periodic classification. Classification of elements into s, p, d, f blocks and their main characteristics. Periodic trends in physical and chemical properties of elements: Atomic radii, Ionic radii, Inert gas radii, Ionization energy, Electron gain energy, Electronegativity, Valency, variation of oxidation states, Electropositivity – Metallic and Non-metallic nature, Nature of Oxides, Diagonal relationship. Variation of atomic radii in inner transition elements.

**III. CHEMICAL BONDING AND MOLECULAR STRUCTURE:** Kossel -Lewis approach to chemical bonding. Factors favorable for the formation of ionic bond, energy changes in ionic bond formation. Crystal lattice energy - calculation of lattice energy – Born - Haber cycle. Crystal structure of sodium chloride and Caesium chloride, Coordination number. Properties of ionic compounds. Covalent bond - VSEPR theory – Lewis representation of covalent compounds, Formal charge, geometry of simple molecules. The valence bond approach for the formation of covalent bonds. Directional properties of covalent bond. Properties of covalent bond. Hybridization - different types of hybridization involving s, p and d orbitals. Shapes of simple covalent molecules. Definition of coordinate covalent bond with examples. Molecular orbital theory of homonuclear diatomic molecules. Symmetry and energy of sigma and pi bonding and antibonding molecular orbitals. Molecular orbital energy diagram of  $H_2$ ,  $N_2$  and  $O_2$ . Concept of hydrogen bond and its types with examples. Effect of hydrogen bonding on properties of compounds.

**IV. STOICHIOMETRY:** Laws of chemical combination. Molar mass, concept of equivalent weight with examples. Percentage composition of compounds and calculation of empirical and molecular formulae of compounds. Chemical reactions and equations, Stoichiometry. Oxidation number concept. Balancing of redox reactions by ion electron method and oxidation number method. Types of redox reactions. Applications of redox reactions in titrimetric quantitative analysis. Redox reactions and electrode processes.

**V. STATES OF MATTER / GASES :** Graham's law of diffusion, Dalton's law of partial pressures, Avogadro's law. Ideal behavior, empirical derivation of gas equation, ideal gas equation. Kinetic molecular theory of gases. Kinetic gas equation (No derivation) - deduction of gas laws. Distribution of molecular velocities and types of molecular velocities – Average, Root Mean Square and Most Probable Velocity. Behaviour of real gases, deviation from ideal behaviour, compressibility factor versus pressure, diagrams of real gases. Conductions of liquification of gases, critical temperature.

**VI. SOLUTIONS:** Classification of solutions, molarity, normality, molality and mole fraction. Dilute solutions, vapor pressure, Raoult's law, Limitations of Raoult's law. Colligative properties – (i) Relative lowering of vapor pressure (ii) Elevation of B.P (iii) Depression in freezing point and their relation to molar mass. Osmosis and osmotic pressure - theory of dilute solutions. Determination of molar mass using colligative properties: Ostwald's dynamic method, Cottrell's method, Rast's method and Berkeley Hartley's method. Abnormal molecular mass.

**VII. ELECTRO CHEMISTRY:** Conductance in electrolytic solutions. Specific, Equivalent and Molar conductance - variation of conductance with concentration, Kohlrausch's law, application to calculation of equivalent conductance of weak electrolytes. Electrolytes and non-electrolytes, redox reactions. Electrolysis. Some typical examples of electrolysis viz; Fused Sodium hydroxide, Fused sodium chloride, Brine solution, Fused Magnesium chloride. Faraday's laws of electrolysis and applications. Galvanic and voltaic cells. Representation and notation of electrochemical cells with and without salt bridge. Standard hydrogen electrode, electrode potentials, electrochemical series. EMF of the cell, Nernst equation and its application to calculate EMF of electrochemical cells. Primary cell - dry cell / Leclanche cell. Secondary cells - Fuel cells: Hydrogen - Oxygen fuel cell and Hydrocarbon - Oxygen fuel cell. Corrosion: mechanism, factors to promote corrosion and prevention of corrosion, passivity. Lead accumulator.

**VIII. SOLID STATE:** Classification of solids based on different binding forces as molecular, ionic, covalent, and metallic solids. Elementary treatment of metallic bond. Metallic solids, amorphous and crystalline solids. Unit cell in two dimensional and three dimensional lattices. Seven crystal systems, Bravais lattices. Bragg's equation, X-ray study of crystal structure, Bragg's method. Calculation of density of unit cell, packing in solids, voids, number of atoms per cubic unit cell. Point defects - Schottky and Frenkel defects. Electrical and magnetic properties.

**IX. CHEMICAL KINETICS:** Concepts of reaction rate, factors affecting reaction rates. Rate law, Units of rate constant. Order and molecularity. Methods of determination of order of a reaction. Integrated rate equations and half lives for zero and first order reaction Collision theory of reaction rates (elementary ideas). Concept of activation energy. **Equilibrium:** Equilibrium in physical and chemical processes, dynamic nature of equilibrium, Law of mass action, equilibrium constant. Factors affecting equilibrium. Relation between  $K_p$  and  $K_c$ , Le Chatelier's principle, application to industrial synthesis of (i) Ammonia (ii) Sulphur trioxide. **Acids and Bases:** Lowry-Bronsted acid base theory. Lewis theory, limitation of Lewis theory, Ionic equilibrium. Ionization of acids and bases, strong and weak electrolytes, degree of ionization. Ionic product of water. Concept of pH. Hydrolysis of salts (elementary idea), hydrolysis constant, buffer solutions. Solubility product and common ion effect with illustrative examples.

**X. THERMODYNAMICS:** Concept of system, types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - Internal energy and Enthalpy. Heat capacity and Specific heat, Exothermic and Endothermic reactions, measurement of  $\Delta E$  and  $\Delta H$ , Enthalpy of bond dissociation, combustion, neutralization, formation, atomization, sublimation, phase transition, ionization and dilution. Thermo chemical equations. Hess's law of constant heat summation. Driving force for a spontaneous process. Thermodynamic representation of criteria of spontaneity in terms of entropy, entropy as a state function. Gibbs free energy, Gibbs free energy change for spontaneous, non-spontaneous and equilibrium processes.

**XI. SURFACE CHEMISTRY:** Adsorption: Physical and chemical adsorption, adsorption of gases on solids, factors affecting it - pressure (Langmuir and Freundlich Isotherms) and temperature. Catalysis - types of catalysis, autocatalysis Colloidal state: colloidal solutions, classification of colloidal solutions, protective colloids and Gold number, Properties of colloids - Tyndall effect, Brownian movement. Coagulation. Emulsions, classification of emulsions, micelles, cleansing action of soap.

**XII. HYDROGEN AND ITS COMPOUNDS:** Position of hydrogen in periodic table. Occurrence, isotopes of hydrogen. Hydrogen - Preparation, properties and uses including as a fuel. Reactions of hydrogen leading to ionic, molecular and non - stoichiometric hydrides. Physical and Chemical properties of water and heavy water. Hardness of water and its removal Hydrogen peroxide – methods of preparation, physical and chemical properties - oxidation, reduction, decomposition, disproportionation and addition reactions. Detection, structure and uses of Hydrogen Peroxide.

**XIII. ALKALI AND ALKALINE EARTH METALS:** Electronic configuration, occurrence, Anomalous properties of the first element in each group. Diagonal relationship. Trends in properties like ionization enthalpy, atomic and ionic radii, reactivity with oxygen, hydrogen, halogens and water, uses of alkali and alkaline earth metals. Preparation and properties of Sodium hydroxide, Sodium carbonate and sodium hydrogen carbonate. Preparation and uses of Calcium oxide, Calcium carbonate and Calcium sulphate. Biological importance of Na, K, Mg and Ca.

**XIV. p-BLOCK ELEMENTS: GROUP 13 ELEMENTS: (IIIA GROUP ELEMENTS):** Electronic configuration, occurrence. Variation of properties and oxidation states, trends in chemical reactivity. Anomalous properties of first element of the group. Boron- Physical and chemical properties and uses of boron. Borax, boric acid and boron hydrides. Preparation, structure and properties of diborane. Aluminum: uses, reactions with acids and alkalis. Potash alum.

**XV. p-BLOCK ELEMENTS: GROUP 14 ELEMENTS: (IVA GROUP ELEMENTS):** Electronic configuration, occurrence. Variation of properties and oxidation states, trends in chemical reactivity. Anomalous behavior of first element. Carbon - catenation, allotropic forms, physical and chemical properties and uses. Similarities between carbon and silicon, uses of oxides of carbon. Important compounds of Silicon - Silicon dioxide, Silicon tetrachloride, silicones, silicates and zeolites. Manufacture and uses of Producer gas and Water gas.

**XVI. p- BLOCK ELEMENTS: GROUP 15 ELEMENTS (VA GROUP ELEMENTS):** Occurrence - physical states of nitrogen and phosphorous, allotropy, catenation electronic configuration, oxidation states. General characteristics and structure of hydrides. General characteristics of oxides and halides. Oxoacids of nitrogen and phosphorous. Preparation and uses of nitric acid and Ammonia. Super phosphate of lime.

**XVII. p- BLOCK ELEMENTS: GROUP 16 ELEMENTS (VIA GROUP ELEMENTS):** Occurrence, electronic configuration, oxidation states, physical states of oxygen and sulphur, their structure and allotropy. General characteristics of hydrides, oxides and halides. Structural aspects of oxyacids of chalcogens. Preparation, properties and uses of Ozone. Sodium thiosulphate, Sulphuric acid – industrial process of manufacture.

**XVIII. p- BLOCK ELEMENTS: GROUP 17 ELEMENTS (VIIA GROUP ELEMENTS):** Occurrence, electronic configuration and oxidation states. Physical states of halogens. Ionization Potential, Electronegativity, Electron affinity, bond energies, chemical reactivity, oxidizing power of fluorine and chlorine. Structural aspects of oxyacids of chlorine. Preparation, properties and uses of fluorine, chlorine and bleaching powder. Structures of Inter-halogen compounds.

**XIX. GROUP 18 ELEMENTS: (ZERO GROUP ELEMENTS):** Electronic configuration, occurrence and isolation. Trends in physical and chemical properties and uses. Structures of Xenon oxides and halides.

**XX TRANSITION ELEMENTS:** General introduction, electronic configuration, occurrence and characteristics of transition metals. General trends in properties of first row transition elements - metallic character, ionization energy, variable oxidation states, atomic and ionic radii, color, catalytic property, magnetic property, interstitial compounds and alloy formation. **Lanthanides:** Electronic configuration, variable oxidation states, chemical reactivity and lanthanide contraction. **Coordination compounds:** Introduction, ligands, coordination number, Werner's theory of coordination compounds, shapes of coordination compounds - Valence bond theory, IUPAC nomenclature of mono molecular coordination compounds, bonding, isomerism, EAN rule, importance of coordination compounds in qualitative analysis, extraction of metals and biological systems (chromo-proteins, haemoglobin, chlorophyll: structures only).

**XXI. GENERAL PRINCIPLES OF METALLURGY:** Principles and methods of extraction - concentration, reduction by chemical and Electrolytic methods and refining. Occurrence and principles of extraction of Copper, Zinc, Iron and Silver. Molten electrolysis processes of Aluminium, Magnesium and Sodium.

**XXII. ENVIRONMENTAL CHEMISTRY:** Definition of terms, types of Pollution, Air, Water and Soil pollution. Oxides of carbon, carbon monoxide, oxides of nitrogen and sulphur, chloro fluoro carbons. Chemical reactions in atmosphere, smogs, major atmospheric pollutants, acid rain. Ozone and its reactions, effects of depletion of ozone layer. Green house effect and global warming. Pollution due to industrial wastes.

**XXIII. BASIC PRINCIPLES AND TECHNIQUES IN ORGANIC CHEMISTRY:** Methods of purification, qualitative and quantitative analysis of organic compounds. Classification and IUPAC nomenclature of organic compounds. Homolytic and heterolytic fission of covalent bond. Types of reagents – electrophiles, nucleophiles and free radicals with examples. Reactive intermediates. Types of organic reactions - substitution, addition, elimination and rearrangement reactions with examples. Inductive effect, electromeric effect, resonance and hyperconjugation.

**XXIV. HYDROCARBONS:** Classification of hydrocarbons. **Alkanes** - Nomenclature, isomerism. Methods of preparation of ethane. Physical properties, chemical reactions including free radical mechanism of halogenation, Combustion and Pyrolysis of ethane. **Cycloalkanes** : Preparation and properties of cyclohexane. **Alkenes** - Nomenclature, structure of double bond (ethene), cis, trans isomerism, physical properties. Ethylene: Methods of preparation, physical properties and chemical reactions - addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), Ozonolysis and oxidation. Mechanism of electrophilic addition.

**XXV. ALKYNES & AROMATIC HYDROCARBONS:** Nomenclature, structure of triple bond. Acetylene - Methods of preparation, Physical properties and chemical reactions: acidic character of acetylene, addition reaction of - hydrogen, halogens, hydrogen halides and water. **Aromatic hydrocarbons:** Introduction, IUPAC nomenclature; Benzene: resonance and aromaticity, Chemical properties: Mechanism of electrophilic substitution - Nitration, Sulphonation, Halogenation, Friedel Craft's alkylation and Acylation. Directive influence of functional group in mono-substituted benzene. Carcinogenicity and toxicity.

**XXVI. STEREO CHEMISTRY:** Optical activity-discovery, determination using a polarimeter, specific rotation, Chirality - Chiral objects, Chiral molecules. Configuration and Fischer projections, Asymmetric carbon, elements of symmetry, compounds containing one chiral centre, enantiomers, D-L and R-S nomenclature, racemic forms, racemisation. Compounds containing two chiral centers, diastereo, isomers, mesoform, resolution, importance of stereochemistry.

**XXVII. HALOALKANES & HALOARENES:** Nomenclature, nature of C-X bond, Preparation, physical and chemical properties of ethyl chloride and chloroform. Mechanism of  $S_{N1}$  and  $S_{N2}$  reactions **Haloarenes:** Nature of C-X bond, Substitution reactions of chlorobenzene (directive influence of halogen for mono substituted compounds only).

**XXVIII. ALCOHOLS / PHENOLS AND ETHERS:** **Alcohols:** Nomenclature, methods of preparation, physical and chemical properties of ethyl alcohol, Mechanism of dehydration. Identification of primary, secondary and tertiary alcohols. Uses of methanol and ethanol. **Phenols:** Nomenclature, methods of preparation and Physical and chemical properties of phenol, acidic nature of phenol. Electrophilic substitution reactions, uses of phenols. **Ethers:** Nomenclature, methods of preparation, physical and chemical properties and uses of diethyl ether.

**XXIX. ALDEHYDES AND KETONES:** Nomenclature, and nature of carbonyl group. Methods of preparation and Physical and Chemical properties and uses of acetaldehyde and acetone. Mechanism of nucleophilic addition, Reactivity of alpha hydrogen in aldehydes;

**XXX. CARBOXYLIC ACIDS:** Nomenclature and acidity of carboxylic acids. Methods of preparation, Physical and chemical properties and uses of acetic acid.

**XXXI. ORGANIC COMPOUNDS CONTAINING NITROGEN: Nitrobenzene:** Preparation, properties and uses. **Amines:** Nomenclature and classification of amines. Structure, methods of preparation, physical and chemical properties and uses of Aniline. Identification of primary secondary and tertiary amines. **Diazonium salts:** Preparation, Chemical reactions and importance of diazonium salts in synthetic organic chemistry. Azo dyes and their uses.

**XXXII. POLYMERS & BIOMOLECULES:** Classification of polymers. Addition and condensation polymerization. Copolymerization. Natural rubber, vulcanization of rubber, synthetic rubber – Neoprene and Buna-S Molecular weights of polymers - Number average and weight average molecular weights (definition only) Biopolymers – Carbohydrates and Proteins. Biodegradable polymers and some commercially important polymers like polythene, nylon, polyesters and bakelite. **Carbohydrates:** Importance. Classification into (a) aldoses and ketoses and (b) mono (glucose and fructose), oligo (sucrose, lactose, maltose) and polysaccharides (starch, cellulose, glycogen). Structure determination and properties of glucose. Structural features of oligo and polysaccharides mentioned above. **Proteins:** Elementary idea of Alpha amino acids, peptide bond, polypeptides and proteins. Primary, secondary, tertiary and quaternary structures of Proteins (Qualitative idea only). Denaturation of proteins; enzymes. **Vitamins:** Classification and functions of vitamins in biosystems. **Nucleic Acids:** Types of nucleic acids, primary building blocks of nucleic acids. Chemical composition of DNA & RNA, Primary structure of DNA and its double helix. Replication. Transcription, protein synthesis and genetic code. **Lipids:** Classification, structure and functions of lipids in biosystems. **Hormones:** Classification, structural features and functions of hormones in biosystems.

**XXXIII. CHEMISTRY IN EVERYDAY LIFE:** Uses of Chemicals in medicine: Analgesics : Narcotics (morphine, codeine). Non-narcotics (Aspirin, Ibuprofen). Antipyretics (Analgin, phenacetin and paracetamol). Tranquilizers (Barbituric acid, Luminal, seconal, valium). Antiseptics (Chloroxylenol, bithional), Disinfectants (formalin), Antimicrobials (lysozyme, lactic acid, hydrochloric acid in stomach). Antibiotics (penicillin, chloramphenicol, sulphadiazine). Chemicals in food preservatives (sodium benzoate, potassium metabisulphite). Artificial sweetening agents (Aspartame, alitane, sucralose).

#### ANNEXURE – II

#### MODEL QUESTIONS - BOTANY

- Assertion (A):** In the leaves of the sugarcane  $C_3$  and  $C_4$  cycles are spatially separated.  
**Reason (R) :** Hatch and Slack pathway occurs in bundle sheath cells and Calvin cycle in mesophyll cells.  
1) Both (A) and (R) are true. (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
- Arrange the following in the order of their occurrence in the life cycle of an angiospermic plant:  
I. Primary Endosperm Nucleus II. Generative cell III. Xenogamy IV. Mericarp  
The correct sequence is:  
1) I, III, II, IV 2) III, I, IV, II 3) II, III, I, IV 4) IV, I, II, III
- If one strand of DNA molecule has the nucleotide sequence TAC AAT CGG TAA, the new strand synthesized by heterocatalysis of it will have the nucleotide sequence as:  
1) ATG TTA GCC ATT 2) TAC AAT CGG TAA  
3) AUG UUA GCC AUU 4) TUC UUT CGG TUU
- The vegetative free floating filaments of Spirogyra have:  
I. 1-16 chloroplasts in each cell II. Many pyrenoids in each cell  
III. Many nuclei in each cell IV. Differentiation of base and apex  
The correct combination is:  
1) I and II 2) II and III  
3) I and III 4) II and IV

## Model Questions - Zoology

- 1) In Larynx of Rabbit Cartilage of Santorini are present on  
 (1) Thyroid Cartilage (2) Cricoid Cartilage  
 (3) Arytenoid cartilage (4) Epiglottis.
- 2) Sequence type:  
 Identify the sequence of Mouth parts of cockroach from anterior to posterior direction of head  
 A) Mandibles B) Maxillae C) Labium D) Labrum  
 Correction Sequence is  
 1) B - A - C - D  
 2) D - A - B - C  
 3) D - C - A - B  
 4) B - C - A - D
- 3) Multiple selection type  
 A) It is an excitable cell B) It is derived from Mesoderm  
 C) Resting potentials are due to differences in  $\text{Na}^+$  &  $\text{K}^+$  levels in the inside and outside of the cell.  
 D) A triad system releases  $\text{Ca}^{+}$  ions for excitation E) The functional connection between these cells is called a synapse  
 which of the above are true of a neuron.  
 (1) All (2) Only A,C and E (3) Only A, D & E (4) Only B,C and E
- 4) Reason, Assertion Type  
 Assertion : species is the basic unit of classification in binominal nomenclature  
 Reason : Species are morphologically similar organisms which have the common descent.  
 1) Both assertion and reason are correct and reason is the correct explanation to assertion  
 2) Reason is correct explanation to the assertion but the assertion is not correct  
 3) Both assertion and reason are not correct  
 Only assertion is correct but not the reason

## MODEL QUESTIONS - PHYSICS

1. The equation of motion of a particle executing SHM is,  $a+16\delta^2x=0$ . In this equation, 'a' is the linear acceleration in  $\text{ms}^{-2}$ , of the particle at a displacement x in metres. The time period of SHM in seconds, is  
 (1)  $\frac{1}{4}$  (2)  $\frac{1}{2}$  (3) 1 (4) 2
2. Assertion (A): Duddle's thermogalvanometer can be used to measure alternating current and direct current.  
 Reason (R): Heat produced in a resistance doesn't depend on direction of current.  
 (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
3. Match the pairs in two lists below:
- | List - I   | List - II               |
|--|-------------------------|
| a) Spectra produced by light from incandescent solid                                   | d) photon               |
| b) Elementary particles with zero mass and with a spin of unity                        | e) continuous spectra   |
| c) photocell in which current changes with change in intensity of light after time gap | f) photo-emissive cell  |
|  | g) photoconductive cell |
|  | h) Neutrino             |
|  | i) Band spectra         |
- 1) a-e, b-d, c-g      2) a - l, b - h, c - f  
 3) a -e, b-h, c-f      4) a - l, b - d, c - g

## MODEL QUESTIONS - CHEMISTRY

1. Which one of the following cannot be determined experimentally?  
 1) Order 2) Rate 3) Rate constant 4) Molecularity
2. Which of the following pairs of ions have same paramagnetic moment?  
 I)  $\text{Cu}^{2+}$ ,  $\text{Ti}^{3+}$  II)  $\text{Mn}^{2+}$ ,  $\text{Cu}^{2+}$  III)  $\text{Ti}^{4+}$ ,  $\text{Cu}^{2+}$  IV)  $\text{Mn}^{2+}$ ,  $\text{Fe}^{3+}$   
 1. I and II 2. I and III 3. III and IV 4. I and IV
3. Assertion (A): At 300 K, Kinetic energy of 16 grams of methane is equal to the kinetic energy of 32 grams of oxygen.  
 Reason (R) : At constant temperature, kinetic energy of one mole of all gases is equal.  
 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.

## 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 half an 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 in the examination halls to all candidates appearing for EAMCET – 2010. Candidates are advised to use the HB pencils supplied by the Convener.



## 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.No. 646, dated 10.07.1979.

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

## ANNEXURE – IV

## CRITERIA FOR RANKING (EAMCET – 2010 “AM CATEGORY”)

As per G.O.Ms.No 165 dated 06-09-2007 and G.O.Ms.No 8 (Amendment to the G.O.Ms. No 16) Higher Education Department, dated 27-01-2010, the candidates who have secured qualifying marks in EAMCET and candidates belonging to the category of Scheduled Caste and Schedule Tribe, for whom qualifying marks have not been prescribed, shall be assigned ranking in the order of merit on the basis of combined score obtained by giving 75% weightage to the marks secured in EAMCET and 25% weightage to the marks secured in the relevant group subjects namely Biology, Physics, Chemistry of the qualifying examination.

For the preparation of merit list, in case of more than one student securing the same combined score obtained as mentioned above, the tie shall be resolved to decide the relative ranking by successively considering the following

- i) The total marks secured in EAMCET
- ii) the Marks secured in Biology in EAMCET
- iii) the marks secured in Physics in EAMCET
- iv) the Percentage of Aggregate marks secured in the qualifying examination
- v) if the tie still persists the date of birth of the concerned candidates, the older being given preference over the younger.

The weightage of marks in the case of candidates belonging to the category of Persons of Indian Origin (PIO) / Overseas Citizen of India (OCI) Card Holders, will be decided by a committee constituted by the competent authority.

Additional ICR/OMR will be supplied for the candidates other than Board of Intermediate Education, A.P. at the time of issue of EAMCET-2010 Hall Ticket. The candidates are required to fill in the ICR/OMR Sheet and submit along with attested photo copies of the marks memos of the qualifying examination that includes Bridge Course Marks Memo if any on or before 10th June 2010 failing which the rank will not be awarded.

EAMCET - 2010 (AM)
OMR ANSWER SHEET

SIDE - II
(PART - A)



Date of Birth :

MAKE SURE THAT THE OMR ANSWER SHEET
GIVEN TO YOU CONTAINS YOUR
HALL TICKET NO., NAME & PHOTOGRAPH.
READ INSTRUCTIONS GIVEN ON SIDE - I
CAREFULLY BEFORE ANSWERING.

Hall Ticket No. :
Name :
Father's Name :
Test Centre Code & Name :

(PART - A)

1. Write the
Booklet Code

Box for writing Booklet Code

(A,B,C or D)

3. Booklet Serial Number

Grid for entering Booklet Serial Number (0-9)

4. Gender

Male Female radio buttons

Signature of the candidate

5. Category

OC BC-A BC-B BC-C BC-D BC-E SC ST radio buttons

6. Minority

MUSLIM CHRISTIAN BUDDHIST SIKH ZOROASTRIAN radio buttons

(PART - B)

2. Shade the
Booklet Code

A B C D circles for shading

Do not write anything in this box

Large empty box with circles for shading

Signature of the Invigilator
across the dotted line

(PART - B)

ANSWERS

(Shading should be
neat and dark)

Question grids 01-40 and 41-80 with options 1-4



Question grids 81-120 and 121-160 with options 1-4

USE HB PENCIL TO SHADE THE CIRCLES