ANDHRA PRADESH PUBLIC SERVICE COMMISSION: HYDERABAD

NOTIFICATION NO. 34/2011, Dated: 28/12/2011

ASSISTANT DIRECTOR IN CHEMISTRY/DNA/FORENSIC PSYCHOLOGY/FORENSIC ENGINEERING IN A.P. STATE FORENSIC SCIENCE LABORATORY SERVICE
(General Recruitment)

PARA – 1:

Recruitment Applications are invited On-line through the proforma Application to be made available on WEBSITE (www.apspsc.gov.in) from **27/01/2012 to 27/02/2012 (Note: 25/02/2012 is the last date for payment of fees)** for recruitment to the post **ASSISTANT DIRECTOR IN CHEMISTRY/DNA/FORENSIC PSYCHOLOGY/FORENSIC ENGINEERING IN A.P STATE FORENSIC SCIENCE LABORATORY SERVICE.**

The desirous eligible Candidates may apply ON-LINE by satisfying themselves with the terms and conditions of this recruitment. The details are as follows:-

Pc. No.	Name of the Post	No. of Vacancies	Age as on 01/07/2011 Min. Max.	Scale of Pay Rs.
01	Assistant Director in Chemistry	**04**	18-39	19,050 - 45,850
02	Assistant Director in DNA			
03	Assistant Director in Forensic Psychology			
04	Assistant Director in Forensic Engineering			

(The details of vacancies viz., Community, and Gender wise (G/W) may be seen at Annexure-I.)

NOTE:

1. THE APPLICANTS ARE REQUIRED TO GO THROUGH THE USER GUIDE AND DECIDE THEMSELVES AS TO THEIR ELIGIBILITY FOR THIS RECRUITMENT CAREFULLY BEFORE APPLYING AND ENTER THE PARTICULARS COMPLETELY ONLINE. ALL CANDIDATES HAVE TO PAY **RS. 100/- (RUPEES ONE HUNDERED ONLY)** TOWARDS APPLICATION PROCESSING FEE AND ALL THOSE WHO ARE NOT EXEMPTED FROM PAYMENT OF FEE HAVE ALSO TO PAY **RS. 120/- (RUPEES ONE HUNDRED AND TWENTY ONLY)** TOWARDS EXAMINATION FEE,
2. APPLICANT MUST COMPULSORILY FILL-UP ALL RELEVANT COLUMNS OF APPLICATION AND SUBMIT APPLICATION THROUGH WEBSITE ONLY. THE PARTICULARS MADE AVAILABLE IN THE WEBSITE SHALL BE PROCESSED THROUGH COMPUTER AND THE ELIGIBILITY DECIDED IN TERMS OF NOTIFICATION AND CONFIRMED ACCORDINGLY.
3. THE APPLICATIONS RECEIVED ONLINE IN THE PRESCRIBED PROFORMA AVAILABLE IN THE WEBSITE AND WITHIN THE TIME SHALL ONLY BE CONSIDERED AND THE COMMISSION WILL NOT BE HELD RESPONSIBLE FOR ANY KIND OF DISCREPANCY.
4. APPLICANTS MUST COMPULSORILY UPLOAD HIS/HER OWN SCANNED PHOTO AND SIGNATURE THROUGH J.P.G FORMAT.
5. THE APPLICANTS SHOULD NOT FURNISH ANY PARTICULARS THAT ARE FALSE, TAMPERED, FABRICATED OR SUPPRESS ANY MATERIAL INFORMATION WHILE MAKING AN APPLICATION THROUGH WEBSITE.
6. IMPORTANT:- HAND WRITTEN/TYPED/PHOTOSTAT COPIES/PRINTED APPLICATION FORM WILL NOT BE ENTERTAINED.
7. ALL THE ESSENTIAL CERTIFICATES ISSUED BY THE COMPETENT AUTHORITY SHALL COMPULSORILY BE KEPT WITH THE APPLICANTS TO PRODUCE AS AND WHEN REQUIRED, ON THE DAY OF VERIFICATION DATE ITSELF FOR VERIFICATION. IF CANDIDATES FAIL TO PRODUCE THE SAME, THE CANDIDATURE IS REJECTED / DISQUALIFIED WITHOUT ANY FURTHER CORRESPONDENCE.

The following blank formats (Proforma) are available in the Commission's Website (www.apspsc.gov.in) The candidates can use, if required.

i) **Community, Nativity and Date of Birth Certificate**
ii) **Declaration by the Un-Employed**
iii) **School Study Certificate**
iv) **Certificate of Residence**
v) **Creamy Layer Certificate**

IMPORTANT NOTE: Distribution of vacancies among roster points is subject to variation and confirmation from the Unit Officer/ Appointing authority.

NOTE ON IMPORTANT LEGAL PROVISIONS GOVERNING THE RECRUITMENT PROCESS:

1. Vacancies: The recruitment will be made to the vacancies notified only. There shall be no waiting list as per G.O.Ms.No. 81 General Administration (Ser.A) Department, Dated 22/02/1997 and Rule 6 of APPSC Rules of procedure. In any case, no cognisance will be taken by Commission of any vacancies arising or reported after the completion of the selection and recruitment process or the last date as decided by the Commission as far as this Notification is concerned, and these will be further dealt with as per G.O. & Rule cited above.
2. The Recruitment will be processed as per this Notification and also as per the Rules and Instructions issued by the Government and also as decided by the Commission from time to time in terms of respective Special Rules/Adhoc Rules governing the Recruitment and G.O.Ms.No. 318, Home (Police) Department, Dt. 21/08/1996, U.O. Lr. Rc. No: 142/G5/2005, dt. 04/06/2009 and as per Government orders issued from time to time, and other related G.Os, Rules etc. applicable in this regard.
3. Rules: All are informed that the various conditions and criterion prescribed herein are governed by the General Rules of A.P. State and Subordinate Service Rules, 1996 read with the relevant Special Rules applicable to any particular service in the departments. Any guidelines or clarification is based on the said Rules, and, in case of any necessity, any matter will be processed as per the relevant General and Special Rules cited as in force.
4. The Commission is empowered under the provisions of Article 315 and 320 of the Constitution of India read with relevant laws, rules, regulations and executive instructions and all other enabling legal provisions in this regard to conduct examination for appointment to the posts notified herein, duly following the principle of order of merit as per Rule 3(vi) of the APPSC Rules of Procedure read with relevant statutory provisions and ensuring that the whole recruitment and selection process is carried out with utmost regard to maintain secrecy and confidentiality so as to ensure that the principle of merit is scrupulously followed. A candidate shall be disqualified for appointment, if he himself or through relations or friends or any others has canvassed or endeavored to enlist for his candidature, extraneous support, whether from official or non-official sources for appointment to this service.
5. Reservation for local candidates is not applicable, as the post is State Cadre.
6. The persons already in Government Service/ Autonomous bodies/ Government aided institutions etc., whether in permanent or temporary capacity or as work charged employees are however required to inform in writing, their Head of Office/ Department, that they have applied for this recruitment.
7. The Commission is also empowered to invoke the penal provisions of the A.P. Public Examinations (Prevention of Malpractices and Unfair means) Act 25/97 for matters connected therewith or incidental thereto in respect of this Notification.
8. Caste & Community: Community Certificate issued by the competent authority in terms of G.O.Ms No. 58, SW (J) Dept., dt: 12/5/97 should be submitted at appropriate time. As per General Rules for State and Subordinate Service Rules, Rule -2(28) Explanation: No person who professes a religion different from Hinduism shall be deemed a member of Schedule Caste. **BCs, SCs & STs belonging to other States are not entitled for reservation, Candidates belonging to other States shall pay the prescribed fee of Rs. 120/- (One hundred and Twenty only) through Challan and upload as indicated at Para-4. Otherwise such applications will not be considered and no correspondence on this will be entertained.**
9. Reservation and eligibility in terms of General Rule 22 & 22 (A) of A.P. State and Subordinate Service Rules are applicable.
10. Reservation to Disabled persons is not applicable as per Departmental Special Rules/Adhoc Rules.
11. The Reservation to Women will apply as per General Rules and/or special rules.
12. Reservation to BC-E group will be subject to the adjudications of the litigation before the Honorable Courts including final orders in Civil Appeal No: (a) 2628-2637 of 2010 in SLP. No. 7388-97 of 2010, dated. 25/03/2010 and orders from the Government.
13. Government have issued orders in G.O. Ms. No. 3, Backward Classes Welfare(C-2) Department, dated 4/4/2006, laying down the criteria to determine Creamy Layer among Backward Classes in order to exclude from the provisions of reservations. Government of Andhra Pradesh has adopted all the criteria to determine the Creamy Layer among Backward Classes as fixed by the Government of India. In view of the Government orders, in G.O. Ms. No. 3, Backward Classes Welfare(C-2) Department, dated 4/4/2006, the candidates claiming as belong to Backward Classes have to produce a Certificate regarding their exclusion from the Creamy Layer from the competent authority (Tahasildar). Certificate excluding from Creamy Layer has to be produced at an appropriate time. In case of failure to produce the same on day of verification, the Candidature is rejected without further correspondence.

14. The Candidates who have obtained Degrees through Open Universities / Distance Education mode are required to have recognition by the Distance Education Council, IGNOU. Unless such Degrees had been recognised by the D.E.C. they will not be accepted for purpose of Educational Qualification. The onus in case of doubt, or Proof of recognition by the D.E.C. that their Degrees / Universities have been recognised, rests with the Candidate.

PARA-2: EDUCATIONAL QUALIFICATIONS:

Applicants must possess the qualifications from a recognized University as detailed below or equivalent thereto, subject to various specifications in the relevant service rules and as indented by the department as on the date of notification.

Pc. No.	Name of the Post	Educational Qualifications
01	Assistant Director in Chemistry	M. Sc Degree with First Class or Second Class in Chemistry or its equivalent qualification or B.Sc Degree with A.I.C by examination in Forensic Science.
02	Assistant Director in DNA	M.Sc. Degree with First Class or Second Class in Genetics or its equivalent i.e., 1st or 2nd Class M.Sc., Biotechnology, Biochemistry, Microbiology.
03	Assistant Director in Forensic Psychology	M.A. Degree with First Class or Second Class in Sociology or Criminology or its equivalent i.e., M.A/M.Sc., Psychology, M.A Criminal Justice.
04	Assistant Director in Forensic Engineering	B.E. in Mechanical or Structural Engineering or its equivalent i.e., B.E/B.Tech in Civil or Production Engineering.

Note:- 1) Exceptionally good eye-sight (Colour blindness will be a disqualification); and
2) Must have practical experience in a Forensic Science or Chemical or Analytical or Police Laboratory for at least five years.
3) The experience in relevant field is desirable.

PARA-3 AGE: Minimum 18 years & Maximum 39 years as on 01/07/2011.

N.B.: No person shall be eligible if less than 18 years and is more than 39 of years.

NOTE: The upper age limit prescribed above is relaxable in the following cases:

Sl. No.	Category of candidates	Relaxation of age permissible
1	**2**	**3**
1.	Retrenched temporary employees in the State Census Department with a minimum service of 6 months.	3 Years
2.	A.P. State Government Employees (Employees of APSEB, APSRTC, Corporations, Municipalities etc. are not eligible).	5 Years based on the length of regular service.
3.	Ex-Service men	3 years & length of service rendered in the armed forces.
4.	N.C.C.(who have worked as Instructor in N.C.C.)	3 Years & length of service rendered in the N.C.C.
5.	SC/ST and BCs	5 Years

EXPLANATION:

After provision of the relaxation of Age in Col. No. 3 of table above; the age shall not exceed the maximum age prescribed for the post for the candidates at Sl.No. 3 & 4.

The age relaxations for Ex-Servicemen is applicable for those who have been released from Armed Forces otherwise than by way of dismissal or discharge on account of misconduct or inefficiency.

PARA-4: (a) FEE: (Remittance of Fee) Each applicant must pay **Rs**. **100/- (Rupees One Hundred Only)** towards Application Processing Fee and Examination Fee **RS.120/- (RUPEES ONE HUNDRED AND TWENTY ONLY)** (if Candidates are not exempted from payment of Fee). Payment of **Rs**. **100/- (Rupees One Hundred Only)** towards application processing fee is compulsory for all Applicants.

b) Mode of Payment of Fee:

I Step:-The Candidate has to logon to the WEBSITE **(www.apspsc.gov.in)** and enter his/her Basic Personal Details like Name, Father's Name, Date of Birth, and Community.

II Step:-Immediately on entering the above details the Applicant will get (downloadable)- Challan Form to pay the Fee at AP Online centers /State Bank of India.

III Step:-The Applicant should pay the prescribed Fee in any one of the A.P. Online centers / State Bank of India and obtain Fee paid challan with Journal Number in the first instance.

IV Step:-**On the next working day** after payment of Fee the Applicant should again visit WEBSITE and enter the Journal Number to get the format of Application. The applicant has to invariably fill all the columns in the Application and should submit ON-Line. Even after making payment of fee, candidate fails to submit the bio-data particulars, such applications shall be rejected without giving any notice.

V Step:- If any candidate fails to enter "Community" for any reason, they will be treated as an OC without giving any notice.

NOTE ON EXEMPTIONS: The following category of candidates are exempted from payment of fee:

a) SC, ST, BC & Ex-Service Men.
b) Families having Household Supply White Card issued by Civil Supplies Department, A.P. Government. (Residents of Andhra Pradesh)
c) Un employed youth in the age group of 18 to 34 years as per G.O.Ms.No. 439, G.A.(Ser.A) Dept., dated: 18/10/1996 should submit declaration at an appropriate time to the Commission.
d) Applicants belonging to the categories mentioned above (except Ex-Service Men) hailing from other States are not entitled for exemption from payment of fee and not entitled for claiming any kind of reservation.

PARA-5: PROCEDURE OF SELECTION:

THE SELECTION OF CANDIDATES FOR APPOINTMENT TO THE POSTS WILL BE MADE BY WRITTEN EXAMINATION (OBJECTIVE TYPE) FOR ELIGIBLE CANDIDATES.

THE FINAL SELECTION OF THESE POSTS WILL BE BASED ON THE WRITTEN EXAMINATION.

1. With reference to qualifications notified, as per vacancy position mentioned in Annexure-I, subject to minimum qualifying marks, selection will be made subject wise, duly following merit and rule of reservation. The minimum qualifying marks for selection are OCs 40%, BCs 35% SCs, and STs 30% or as per rules. The minimum qualifying marks are relaxable in the case of SC/ST/BC on the discretion of the Commission.
2. The candidates will be selected and allotted to Service/ Department as per their rank in the merit list against the vacancies available.

N.B.: Mere securing minimum qualifying marks does not vest any right in a candidate for being considered for selection.

3. The appearance in all the papers at the Written Examination as per rules is compulsory. Absence in any of the papers will automatically render his candidature as disqualified.
4. Candidates have to produce Original documents and other particulars **on the day of verification date itself** for verification as and when required and called for. If **candidate fails to produce the certificates if any one, and** the particulars furnished in the Application do not tally with the Original documents produced by the candidate, the candidature will be rejected**/disqualified without any further correspondence**. As candidature for the recruitment is processed through Computer/Electronic devices based on the particulars furnished in the Application Form, the candidate is advised to fill in all the relevant particulars carefully.
5. While the Commission calls for preference of candidates in respect of posts etc., in the application form, it is hereby clarified that the said preferences are only indicative for being considered to the extent possible but not binding or limiting the Commission's powers enjoyed under Article 315 and 320 of the Constitution of India. Therefore, the Commission has the power to assigning a successful candidate to any of the notified posts for which he is considered by them to be qualified and eligible, subject to fulfilling the selection criterion.
6. The appointment of selected candidates will be subject to their being found medically fit in the appropriate medical classification, and if he/she is of sound health, active habits free from any bodily defect or infirmity.

PARA-6: RESERVATION TO LOCAL CANDIDATES: Reservation for local candidates is not applicable, as the post is State Cadre.

PARA-7: SCHEME OF EXAMINATION:- The Scheme & Syllabus for the examination has been shown in Annexure-II.

PARA-8: HOW TO APPLY:

A) HOW TO UPLOAD THE APPLICATION FORM:

i) The Applicants have to read the User Guide for Online Submission of Applications and then proceed further.

I Step: The Candidate has to logon to the WEBSITE **(www.apspsc.gov.in)** and enter his/her Basic Personal Details like Name, Father's Name, Date of Birth, and Community.

II Step: Immediately on entering the above details the Applicant will get (downloadable)- Challan Form to pay the Fee at AP Online centers /State Bank of India.

III Step: The Applicant should pay the prescribed Fee in any one of the A.P. Online centers / State Bank of India and obtain Fee paid challan with Journal Number in the first instance.

IV Step: **On the next working day** after payment of Fee the Applicant should again visit WEBSITE and enter the Journal Number to get and fill the format of Application and should submit ON-LINE.

V Step: Affix your recent Colour Passport Size Photograph on a White Paper and then sign below the photograph with Black Pen. Scan the above Photo and Signature and Upload in the appropriate space provided (JPG Format) in Application Form.

VI Step: The applicants have to invariably fill all the relevant columns in the Application and should submit ON-LINE.

ii) **Hand written/ Typed/ Photostat copies/ outside printed Application Form will not be accepted and liable for rejection**.

iii) Only applicants willing to serve anywhere in the Andhra Pradesh should apply.

iv) For any problems related to Online submission and downloading of Hall-Tickets please contact 040-23557455 ((Call Time: 9.30 A.M to 1.00 P.M & 1.30 P.M to 5.30 P.M) or mail to **appschelpdesk@gmail.com**.

NOTE:

1. The Commission is not responsible, for any discrepancy in submitting through Online. The applicants are therefore, advised to strictly follow the instructions and User guide in their own interest.
2. The particulars furnished by the applicant in the Application Form will be taken as final, and data entry processed, based on these particulars only by Computer. Candidates should, therefore, be very careful in Uploading / Submitting the Application Form Online.
3. INCOMPLETE/INCORRECT APPLICATION FORM WILL BE SUMMARILY REJECTED. THE INFORMATION IF ANY FURNISHED BY THE CANDIDATE SUBSEQUENTLY WILL NOT BE ENTERTAINED BY THE COMMISSION UNDER ANY CIRCUMSTANCES. APPLICANTS SHOULD BE CAREFUL IN FILLING-UP THE APPLICATION FORM AND SUBMISSION. IF ANY LAPSE IS DETECTED DURING THE SCRUTINY, THE CANDIDATURE WILL BE REJECTED EVEN THOUGH HE/SHE COMES THROUGH THE FINAL STAGE OF RECRUITMENT PROCESS OR EVEN AT A LATER STAGE.
4. Before Uploading/Submission Application Form, the Candidates should carefully ensure his/her eligibility for this examination. NO RELEVANT COLUMN OF THE APPLICATION FORM SHOULD BE LEFT BLANK, OTHERWISE APPLICATION FORM WILL NOT BE ACCEPTED.
5. The candidates should carefully decide about the choice for CENTRE for the examination, which is taken as final. If any candidate appears at a centre/ Examination venue other than one allotted by the Commission, the answer sheets of such candidates shall not be valued and liable for invalidation.
6. The Commission reserves the right to create centre(s) for examination and also to call the Candidates for the test at any other centre.

PARA-9: CENTRES FOR THE WRITTEN EXAMINATION:

1. The Written Examination will be held at **HYDERABAD** only.
2. The Written Examination is likely to be held on **18/03/2012**

PARA-10: INSTRUCTIONS TO CANDIDATES:

1) The candidates must note that his/her admission to the examination is strictly provisional. The mere fact that an Admission has been issued to him/her does not imply that his/her candidature has been finally cleared by the Commission or that the entries made by the

candidate in his/her application have been accepted by the Commission as true and correct. Candidates are required to upload his / her photo with signature in the prescribed format of Application form. Failure to produce the same photograph, if required, at the time of verification, may lead to disqualification. Hence the candidates are advised not to change their appearance till the recruitment process is complete.

2) The candidates should go through the instructions given on the cover page of test booklet and carefully write his/her Register Number, Centre etc., in the Answer Sheet, which will be provided to him/her in the examination hall.
3) Since the answer sheets are to be scanned (valued) with Optical Mark Scanner system, the candidates have to USE BALL POINT PEN (BLUE/BLACK) ONLY FOR MARKING THE ANSWERS. The candidates will be supplied OMR Sheet in duplicate. The candidate is required to use Ball Point Pen (Blue or Black) for filling the relevant blocks in the OMR Sheet including bubbling the answers. After writing the examination the candidate has to handover the original OMR sheet to the invigilator in the examination hall, if any candidate takes away the original OMR Sheet his/her candidature will be rejected. However the candidate is permitted to take away the duplicate OMR Sheet. The candidates should bring Ball Point Pen(Blue/Black) and smooth writing pad to fill up relevant columns on the Answer Sheet. The candidate must ensure encoding the Subject, Register No., etc., on the O.M.R. Answer sheet correctly, failing which the Answer sheet will be rejected and will not be valued. Use of whitener on OMR Sheet will lead to disqualification.
4) The candidates should satisfy the Invigilator of his identity with reference to the signature and photographs.
5) The candidates should take their seats 20 minutes before the commencement of the examination and are not to be allowed after 10 minutes of the scheduled time. They should not leave the examination hall till expiry of fulltime. The candidates are allowed to use the calculators in the examination hall (not programmable calculators). Loaning and interchanging of articles among the candidates is not permitted in the examination hall. Cell phones and Pagers are not allowed in the examination hall.
6) The candidates are expected to behave in orderly and disciplined manner while writing the examination. If any candidate takes away Answer Sheet, the candidature will be rejected and in case of impersonation/ disorder/ rowdy behavior during Written Examination, necessary F.I.R. for this incident will be lodged with concerned Police Station, apart from disqualifying appointment in future.

   Merit is the only criteria that decides the selections. Candidates trying to use unfair means shall be disqualified from the selection. No correspondence whatsoever will be entertained from the candidates. The candidature and conditions specified here are subject to latest rules / orders come into force during the process of recruitment.
7) The Commission would be analyzing the responses of a candidate with other appeared candidates to detect patterns of similarity. If it is suspected that the responses have been shared and the scores obtained are not genuine/ valid, the Commission reserves the right to cancel his/ her candidature and to invalidate the Answer Sheet.
8) If the candidate noticed any discrepancy printed on Hall ticket as to community, date of birth etc., they may immediately bring to the notice of Commission's officials/Chief Superintendent in the exam centre and necessary corrections be made in the Nominal Roll for being verified by the Commission's Office.

PARA-11:DEBARMENT:

a) Candidates should make sure of their eligibility to the post applied for and that the declaration made by them in the format of application regarding their eligibility is correct in all respects. Any candidate furnishing in-correct information or making false declaration regarding his/her eligibility at any stage or suppressing any information is liable TO BE DEBARRED FOR FIVE YEARS FROM APPEARING FOR ANY OF THE EXAMINATIONS CONDUCTED BY THE COMMISSION, and summarily rejection of their candidature for this recruitment.
b) The Penal Provisions of Act 25/97 published in the A.P. Gazette No. 35, Part-IV.B Extraordinary dated: 21/08/1997 shall be invoked if malpractice and unfair means are noticed at any stage of the Recruitment.
c) The Commission is vested with the constitutional duty of conducting recruitment and selection as per rules duly maintaining utmost secrecy and confidentiality in this process and any attempt by anyone causing or likely to cause breach of this constitutional duty in such manner or by such action as to violate or likely to violate the fair practices followed and ensured by the Commission will be sufficient cause for rendering such questionable means as ground for debarment and penal consequences as per law and rules as per decision of the Commission.
d) Any candidate is or has been found impersonating or procuring impersonation by any person or resorting to any other irregular or improper means in connection with his / her candidature for selection or obtaining support of candidature by any means, such a candidate may in addition to rendering himself/ herself liable to criminal prosecution, will be

liable to be debarred permanently from any exam or selection held by the Service Commission's in the country.

e) **MEMORANDUM OF MARKS:** Memorandum of Marks is issued on payment of Rs.25/- (Rupees twenty five only) through crossed Indian Postal Order only drawn in favour of the Secretary, A.P. Public Service Commission, Hyderabad. Request for Memorandum of Marks from candidates, will be entertained within two months from the date of publication of the selections. Such a request must necessarily be accompanied by a Xerox copy of the Hall-ticket. Request for revaluation or recounting will not be under taken under any circumstances. Invalid, disqualified, ineligible candidates will not be issued any Memorandum of Marks and fees paid by such candidates, if any, will be forfeited to Government account, without any correspondence in this regard.

If any candidate fails to mark the Booklet Series, Roll Number etc., in the OMR Answer Sheet, the Commission reserves the right to invalidate such Answer Sheets as Answer Sheets are valued by Optical Mark Scanner. In case of rejection/ invalidation due to omission on the part of the candidate, the decision of the Commission is final and such request for Memorandum of Marks in such cases will be intimated accordingly. No request for reconsideration of such rejected/invalidated cases will be entertained under any circumstances whatsoever.

PARA-12: COMMISSION'S DECISION TO BE FINAL:

The decision of the Commission in all aspects and all respects pertaining to the application and its acceptance or rejection as the case may be, conduct of examination and at all consequent stages culminating in the selection or otherwise of any candidate shall be final in all respects and binding on all concerned, under the powers vested with it under Article 315 and 320 of the Constitution of India. Commission also reserves its right to alter and modify regarding time and conditions laid down in the notification for conducting the various stages up to selection, duly intimating details thereof to all concerned, as warranted by any unforeseen circumstances arising during the course of this process, or as deemed necessary by the Commission at any stage.

Hyderabad. **Sd/-**
DATE: 28/12/2011 **SECRETARY**

ANNEXURE – I

NOTIFICATION NO. 34/2011

(General Recruitment)

BREAKUP OF PROVISIONAL VACANCIES FOR THE POST OF ASSISTANT DIRECTOR IN CHEMISTRY/DNA/FORENSIC PSYCHOLOGY/FORENSIC ENGINEERING IN FORENSIC SCIENCE LABORATORY SERVICE

STATE WIDE POST	OC		BC-A		SC		Total	
	G	W	G	W	G	W	G	W
	01	01	–	01	–	01	01	03

ANNEXURE – II

NOTIFICATION NO. 34/2011

SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF ASSISTANT DIRECTOR IN CHEMISTRY/DNA/FORENSIC PSYCHOLOGY/FORENSIC ENGINEERING IN FORENSIC SCIENCE LABORATORY SERVICE

(I). ASSISTANT DIRECTOR, CHEMISTRY

Written (Objective type) Examination :			
Paper – 1 : General Studies and Mental Ability	150 Questions	150 Mts.	150 Marks
Paper – 2 : Chemistry **OR** Forensic Science	150 Questions	150 Mts.	300 Marks
Total			450 Marks

PAPER – I
GENERAL STUDIES AND MENTAL ABILITY

1. General Science – Contemporary developments in Science and Technology and their implications including matters of every day observation and experience, as may be expected of a well-educated person who has not made a special study of any scientific discipline.

2. Current events of national and international importance.

3. History of India – emphasis will be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on AP Indian National Movement.

4. World Geography and Geography of India with a focus on AP.

5. Indian polity and Economy – including the country's political system- rural development – Planning and economic reforms in India.

6. Mental ability – reasoning and inferences.

7. **DISASTER MANAGEMENT** (Source : CBSE Publications)

1. Concepts in disaster management and vulnerability profile of India / State of A.P.
2. Earth quakes / Cyclones / Tsunami / Floods / Drought – causes and effects.
3. Man made disasters - Prevention strategies.
4. Mitigation strategies / Mitigation measures.

PAPER – II
CHEMISTRY

Inorganic Chemistry:-

1. Atomic structure & Chemical Bonding – Quantum theory Schrodinger – wave equation – Hydrogen atom,Hydrogen molecule – Elements on valence bond – molecular orbital theories.
2. Determination of molecular structure – X – ray and electron diffraction methods.
3. Periodic classification (Classical and modern) periodic functions of elements – atomic volume – atomic radious electronegativity-oxidation states – lattice energy and their applications.
4. Chemistry of d-block elements – Physical and chemical characteristics of the transition elements – Characteristics related to electronic arrangements oxidation states – colow magnetic properties – Complex formation – interstitial L-S couping – Hund's rule. A General study of the first transition series.
5. Chemistry of F-block elements – Lanthanons and Actinons – electronic configurations – oxidation's states – Separation of Lanthanons and Actinons.
6. Chemistry of complex compounds: Jourgenson and werner's views – effective atomic number – valence bond theory – Introductory treatment of crystalfield theory applied to complexes with co-ordination number 6.
7. Isomerism in complexes: Geometrical and optical isomerism of four and six co-ordinated complexes. Pearson's theory of hard and soft acids and bases.
8. Study of the following elements and their modern Chemistry Be, Ti, Zr, Hf, V, Mo, W, U, and Th.
9. Alloys: Interimettalic compounds.

Physical Chemistry:

10. Radio activity: Elementary account of nuclear structure natural and artificial radio activity – characterisation of relations – decay chains-half-life-decay constant and average life. Radio-active series, atomic transmutation – atomic fission and fusion reactions and their applications – nuclear isomers and their separations.
11. Kinetic theory of gases: Equations of state – critical constants – States of aggregation – liquid states – viscocity – physical properties an chemical constitution – collision theory of derivation of the collision – number from Kinetic theory of gases.
12. Chemical Kinetics: order and molecularity of reaction first order and second order reactions – law of mass action – influence of temperature and pressure – thermo-dynamic derivation of Law of mass action – unimolecular reactions Lindemann's theory.
13. Thermodynamics: First law of thermodynamics and its applications to ideal gases, energy and enthalpy changes in gases, heat capacities of gases and their inter-relation. Isothermal and adiabatic processes – Kirchoff's equation and its applications – Vant Hoff's isotherm isochore equilibria in heterogeneous system. Second Flaw of thermo dynamics (Joules and Joule Thomson experiments). Entropy change in an isolated system for reversible and irrevbersible processes – Variation on entropy of a system with temperature and pressure.

Organic Chemistry:

14. Heterocylic compounds and chemistry of nutral products – Importance of heterocyclic compounds – classification based on the natury of heterocetom, size of the ring and II excessive and II deficient nature of the ring.

    A general and comparative study of Furan pyrole and thiophene Ring transformations. General comparison with benzenoidd compounds, pyridine, quinotine, Isoquinoline and acrdine-fII deficient nature of heterocylic rings – case of nucleophilic substitution.
15. Methods of synthesis, reactivity and properties of the following polynuclear aromatic compounds: anthracene, Benzanthracene, Phenontherene Chryeneand picene.
16. Benzopyrones : Couamarins and Chromones.
17. Alkaloids: General occurrence, reactions and degradations. Chemical and Physico-Chemical methods for the elucidation of structures-synthesis and structural elucidation of the following alakaloids – atropine – cocaine - quinene – Narcotine – papaverine.
18. Organic reaction mechanism: Structure and reactivity of organic molecules – Factors affecting Electron density in a band-inductive, induct rometric, mesomeric, (reasonance) and electrometric effects, hyperconjugation – Dipole moments-acedic and basic strength of organic Compounds.

    Modern concepts of organic reaction mechanisms – Addition, substitution and elimination reactions – simple examples and their mechanism. The intermediate carboniumion formation and its participation in organic reactions. Addition C-C, system-pinocol-pincolene rearrange rearrangements. Automatic substitution – Formation and hydrolysis of esters.
19. Some name reactions: Wurtz-Friedel-Crafts, Fries-Gatter-mann – Perin – Beckmann's rearrangements and Grignard reactions.
20. Carbohydrates: General reactions of monosaccha rides – configurational studies on glucose, fructose, sucrose, Recent advances in the Chemistry of cellulose and starch.
21. Proteins – Introduction to proteins – their classification – Nomenclature and distribution in nature simple, amino acids – Isolation and their synthesis.
22. General Ideas regarding the chemistry of vitamins & Harmones nicotine, B-Carotene and Vitamin C.
23. Alicyclic compounds: Synthesis and reactions Bayers strain theory – Factors affecting stability of conformation – terpenes – citral – gerniol – limonenene – terpinol – pinene and camphor.
24. Stereo Chemistry: Opticnal and geometrtic isomerism configuration of saturated molecues – DL and RS configuration of optically active compound-racemic – mixtures – racemisation and resolution.
25. Molecular spectra: NMR, Chemical shift – Spin – Spincoupling – ESR of simple radicals – Rotational Spectra, diatomic molecules, linear triatomic molecules, isotopic substitution – Vibrational and Raman Spectra.

Physical Chemistry:

26. Electro-Chemistry: Equivalent conductance and its measurement. The independent migration of jons – kholraush's Law. Transport number and their determination. Ionic mobilities. Equivalent conductance of weak and strong electrolytes. Inter-ionic attraction theory treated quantitatively-Debye-huckle-onsager equation. Determination of solubilities from conductance measurements -–Conductometric titration's.

Ionic product of water and its determination from conductance and EMF methods – theories of acids and bases – Hydrogen ion concentration and its measurements from E.M.F.measurements using Hydrogen quin – hydroen and glass electrodes – Buffer solutions – Henderson's equation potentiometric titration's – Determinations of equilibrium constant and solubilities from E.M.F.measurements – Gibbs – Helmbholtz equation and its application to chemical cells.

27. Photo – Chemistry: Laws on absorption of light – Gretius – Draper Laws – Einstiens Law in Chain reactions – Hydrogen chlorine reactions – absorption – Laws of absorption.
28. Surface Chemistry and catalysis – Absorption isotherms, surface area determination, heterogeneous catalysis, acid-base and enzyme cotolysis.

FORENSIC SCIENCE

Introduction to forensic science:

Definition of forensic science – History of forensic science – Organization of forensic science laboratories and other allied institutions – Duties of forensic scientists – Physical evidence and Loccard's exchange principle – Classification of physical evidence – Role of forensic science in crime investigation – Crime scene – Crime scene management – Searching of crime scene for physical evidence – Collection, preservation, packing and forwarding of physical evidence to forensic science laboratory – Chain of custody – Reconstruction of scene of crime

Basic wet analytical chemistry:

Nature and scope of analytical chemistry – Classification of analytical methods – Macro, semi-micro, micro and ultra micro analytical methods – Conventional and instrumental methods of analysis – Comparative, absolute, qualitative and quantitative methods of analysis

Theoretical principles of analytical chemistry – Law of mass action and its application – Le Chatlier and Braun principle – van't Hoff reaction isotherm –

Dissociation theory – Electrolytes and non electrolytes – Classification of acids, bases and salts according to their degree of dissociation – Dissociation of acids, bases and salts – Dissociation constants – Common ion effect – Solubility product – Conditions for precipitation – Order of precipitation – Factors affecting precipitation – Diverse ion effect – Ionization of water – pH value – pOH value, Relation between pOH: pH scale – pH scale - Salt hydrolysis – Degree of hydrolysis and hydrolysis constant – Buffer solutions - Buffer action - Calculation of pH of a buffer solution – preparation of buffer solutions – Completeness of a chemical reaction – Complex compounds – Oxidation reduction reactions – Oxidation reduction potentials

Organic reagents in detection of inorganic ions – Oxidizing and reducing agents in organic chemistry – Inorganic and organic spot tests – Micro chemical tests – Physical tests – Qualitative inorganic analysis – Group separations for cations and anions – Interfering radicals - Elemental analysis of organic compounds – Functional group analysis – Schemes of identification of unknown solids, liquids and gases (inorganic and organic) – Confirmation tests and their importance – Sensitivity and limit of detection – Alternative methods of analysis – Physical separation methods – Distillation – Extraction – Precipitation – Crystallization – Chromatographic methods

Volumetric / Titrimetric methods of analysis – General principle – Equivalence point and end point – Fundamental requirement of a titrimetric method – Standard solution – Detection of end point – Indirect titrations – Types of reactions – Calculations in titrimetry – Aqueous acid-base titrimetry – Acids and bases –Preparation of standard solutions – Primary standards – Indicators – Theory of indicators – Strong acid- strong base; weak acid-strong base; weak base-strong acid and weak acid-weak base titrations – Acid-base titrimetry in nonaqueous solvents – Redox titrimetry – Oxidation and reduction – Oxidant and reductant – Iodimetry and iodometry – Permanganometry – Dichromatometry – Precipitation methods – Argentometry – Complexometry – EDTA methods – Instrumental methods and automated volumetric analysis

Gravimetric methods of analysis – Basic Digestion of precipitates – Washing of precipitates – Drying and ignition of precipitates – Thermal decomposition of precipitates – Organic precipitants - Extraction

methods in gravimetry – Determination of chloride, suphate, iron, calcium and nickel as examples principles – Factors affecting gravimetric analysis – Requirements of quantitative separation – The process of precipitation – Saturated and supersaturated solution – Nucleation – Crystal growth – Conditions of precipitation – Completeness of precipitation – factors influencing solubility – Purity of a precipitate – Adsorption of ions on precipitates – Co precipitation – Occlusion and post precipitation

Instrumental methods of analysis:
Unit Measurements, signals and data – Introduction – Signal to noise ratio – Sensitivity and detection limit, sources of noise – Evaluation and measurement – Accuracy and instrument calibration

Atomic Spectrometry - Spectrometric methods – General properties of Electromagnetic Radiation – Wave and quantum mechanical properties of radiation – Optical Atomic Spectra – Principles, instrumentation , techniques and forensic applications of: Atomic Absorption Spectrometry – Atomic Emission Spectrometry – Atomic Mass Spectrometry

Molecular Spectroscopy – Introduction to UV-Visible Molecular Absorption Spectrometry – Measurement of Transmittance and Absorbance – Beer's Law – Instrumentation of UV- Visible Molecular Absorption Spectrometry – Molar Absorptivities – Absorbing Species – Application to Qualitative Analysis – Quantitative Analysis – Photometric Titrations –Molecular Luminescence Spectrometry – Theory of Fluorescence and Phosphorescence – Instrumentation for Fluorescence and Phosphorescence Measurements – Applications of Photoluminescence methods – Chemiluminescence - Infrared Spectrometry – Theory – Infrared Sources and Transducers – Instrumentation –Dispersive and FT instruments -Techniques and Applications –IR Micro spectrometry – Forensic Applications of IR Spectrometric methods
Nuclear Magnetic Resonance Spectrometry – Principles, Instrumentation, Techniques and Forensic Applications

Chromatographic Techniques – Introduction – History of Chromatography - Theoretical principles of Chromatography – Classification of Chromatographic Methods – Adsorption and Partition Chromatography - Principles, instrumentation, techniques and applications of Thin Layer and High Performance Thin Layer Chromatography, Method Development in Planar Chromatography - Gas Chromatography – Instrumentation – Detectors - Adsorption, Partition, Gas Solid, Gas Liquid, Isothermal, Linear Temperature Programming, Chiral, Pyrolysis and Derivatization Chromatography - Columns and Stationary Phases – Column Efficiency –Method Development - Forensic Applications of Gas Chromatography - High Performance Liquid Chromatography – Instrumentation Detectors – Columns and Stationary Phases - Isocratic, Gradient, Adsorption, Partition, Ion and Derivatization Chromatography – Method Development – Applications of Liquid Chromatography- Super Critical Fluid Chromatography – Properties of Super Critical Fluids – Instrumentation – Columns – Detectors – Applications - Capillary electrophoresis – Principles – Instrumentation – Techniques and Applications.

Molecular Mass Spectrometry – Molecular Mass Spectra – Ion Sources – Mass Spectrometers – Qualitative and Quantitative Applications of Molecular Mass Spectrometry – Interpretation of Mass Spectra Hyphenated techniques – Principle, instrumentation, techniques and applications of GC-FTIR, GC-MS, LC-MS, MS-MS.

Thermal Methods – Principles, Instrumentation, Techniques and Applications of: Thermogravimetric Methods – Differential Thermal Analysis – Differential Scanning Calorimetry

Radiochemical Methods – Radioactive Isotopes - Principles, Instrumentation, Techniques and Application of Neutron Activation Analysis and Isotope Dilution Methods.

Electrochemical Techniques – Introduction – Principles, instrumentation, techniques and applications of Potentiometry, Ion-selective electrodes, Coulometry and Polarography.

Forensic Chemistry:

Forensic Chemistry - Introduction - Types of cases / exhibits - Preliminary screening - presumptive tests (colour and spot tests) - Examinations procedures involving standard methods and instrumental techniques

Qualitative and quantitative forensic analysis of inorganic and organic material - Chemical fertilizers (N,P,K) _ Insecticides (Endosulfan, Malathion, Carbaryl) - Metallurgical analysis (Fe, Cu, Zn, Au, Ag) – Natural products (tobacco, tea, sugars, rubber) – Industrial chemicals - Sulphuric, Nitric and Hydrochloric acids, Sodium, Potassium hydroxide, Ammonium nitrate, Potassium chlorate, Organic solvents like Methanol, Ethanol, Acetone, Chloroform and Ether Organic chemicals like Acetanilide, P- Aminophenol, Nitrobenzene etc. with reference to forensic work

Examination of petroleum products - Distillation and fractionation - various fractions and their commercial uses - Standard method of analysis of petroleum products – Analysis if petroleum products for adulteration and arson residues

Chemistry of fire - Investigation and evaluation of fires – Causes of fire - Analysis of arson residues by conventional and instrumental methods

Analysis of trace evidence - Cosmetics, Dyes, Trap related evidence materials, Paints, Pigments, Fibres, Oils fats, Greases, Industrial dusts, Chemicals and Plant materials.

Analysis of beverages: Composition and analysis of alcoholic and non-alcoholic beverages, country made liquor, illicit liquor and medicinal preparations containing alcohol – Common adulterants and toxic substances in alcoholic beverages.

Analysis of Narcotic Drugs and Psychotropic Substances - Introduction - classification of NDPS / drugs of abuse – Drug abuse - Drugs of abuse in sports - Designers drugs - Forensic examination of NDPS – Clandestine laboratories – Drug profiling

The study of NDPS should be exemplified by Opiates, Cannabis, Cocaine, Amphetamines, Benzodiazepines, Disubstituted Quinazolones, Barbiturates and LSD, Psylocybin, Mescaline and MDMA.

Drugs and Cosmetic Act, Excise Act, NDPS Act.

Explosives and Explosion residues – composition, Classification, and characteristics of explosives, pyrotechnics, IEDs - Explosion process and effects - Approach to scene of explosion - post-blast explosion residue collection - Reconstruction of sequence of events - Evaluation and assessment of scene of explosion - Systematic analysis of explosives and explosion residues in the laboratory using chemical and instrumental techniques (exemplified by country bomb compositions, Picric acid, Gun powder, Ammonium nitrate, NG, NC, TNT, PETN, TETRYL, RDX and HMX) - Synthesis of above organic explosives – Profiling and tagging of explosives- Interpretation of results, Explosives Act and Explosive Substances Act.

Forensic toxicology:

Toxicology- Introduction- History- Scope- Areas of Toxicology- Role of forensic toxicologist- Poisons- Classification of poisons- Types of poisoning- Sample collection and preservation of toxicological exhibits in fatal and survival cases- Storage of samples- Signs and symptoms of poisoning- Toxicological investigation/examination of poisoned death- Interpretation of toxicological data- Courtroom testimony in toxicological cases. Case Histories

Pharmacokinetics - Methods of transportation of toxicant- Absorption- Distribution- Storage of toxicants- Redistribution - Metabolism-Oxidation – Reduction – Hydrolysis – Conjugation - Excretion- Other routes of elimination- Toxicokinetics- one and two compartmental model – Toxicodynamics- Spectrum of undesired (toxic) effects- Interaction of chemicals- Tolerance- Dose response relationship- Developmental and reproductive toxicity- Mutagenicity- Toxicity testing

Introduction- Extraction , Isolation and Clean-up procedures in toxicological analysis- Identification and quantitation of poisons by physical, chemical, chromatographic, spectrophotometric, electrophoretic, immunoassay- and other methods.
(Metals, anions, volatile poisons, gases, drugs, pesticides and miscellaneous poisons such as plant poisons, radioactive materials, animal toxins). Field testing in toxicological work – Therapeutic drug monitoring – Analysis of drug abuse in sports – Emergency hospital toxicology

Management of acute poisoning- Introduction- Maintenance of vital functions- Measures to enhance elimination of poisons- Removal of unabsorbed poisons- Antidotes- Classification of antidotes- Mechanism of action of antidote (cyanide, methanol, arsenic, opiate, carbon monoxide, nitrite, acetaminophen and pesticides) Identifying route of administration of poison- Estimation of time and dose after administration of poison- Recovery and after care of patients- Poison Information/Control Centre.

Forensic laboratory management:

Basic statistics - Random experiment brief introduction to sampling and data collection, frequency distribution, concept of measures of central tendencies, Arithmetic Mean, Median & Mode concept of measures of Dispersion, Variance, Standard deviation, Variance, Standard Deviation, Coefficient of variation.

Concept of probability – Definitions of probability – Addition, Multiplication and Bayers theorem & applications.

Concept of random variable, Discrete and continuous – some examples, Concept of probability distribution-Binomial, Poisson, normal distribution – Definitions, statements of properties of above distribution and examples.

Simple regression and correlation – concept of computational methodology – examples.

Concept of tests of hypothesis – Null and alternative hypothesis, critical region, types of errors & level of significance.

Large samples tests – test for single mean, Difference of means, single proportion and difference of proportion examples. Chi square test for goodness of fit and test for independence of attributes – examples.

T-test for simple mean, difference of means – examples.

F-test for equality of variance – examples.

Concept of analysis of variance – computational procedure for ANOVA one way and two-way classification-examples.

Standards for analysis – Basic standards – Need of standards is analytical sciences – Basic chemical standards – Analytical standards – Reference materials – high purity substances – Certified reference materials – working or secondary standards – matrix effect in standards –

Quality Management – Introduction – Quality - Quality system – Quality plan – Inspection and testing – Test records – Control of inspection Handling, storage, packaging, preservation and delivery of the material – Control of quality records – Internal quality audits – Quality assurance – Training.

Laboratory Accreditation – ISO 9000 and ISO 14000 and 17000 series of standards – Accreditation Boards – NABL guidelines for accreditation in India

Proficiency testing system – Internal quality control – Inter and intra laboratory testing programmes – Designing and running the proficiency testing programmes – Confidentiality Advantages of accreditation.

Laboratory Management : Administration of Laboratories – Types of laboratories – Connection between filed work and laboratory – Educational requirements of laboratory personnel – Routine laboratory work – Research and development – Internal organization of a laboratory. Architectural requirements – Laboratory design – Floor area furniture design – Auxiliary services – Receipt of reports and remnants – Record management – Requirement of equipment, glassware, chemicals and other material – Purchase procedure – Disposal of wastes – Security of the premises.

Laboratory safety – planning – written safety plan – Safety policies – Safety resources – operations Hazards of chemicals, solvents, poisons and explosives – storage facilities – Biological hazards -

Pressure vessels and then handling – Electrical safety – Fume cup boards- Exhausts system – Protective equipment-Emergency care and medical facilities

Ethical issues – Introduction – Causes of unethical acts – Ignorance of laws, codes, policies and procedures – Recognition – Friendship – Personal gain - Professional ethics – Professional conduct - Ethical decision making – Ethical dilemmas - Teaching ethical values to scientists – Good laboratory practices – Good manufacturing practices – Laboratory accreditation

Research methodology – Introduction – Basic research – Applied research – Need based research - Identification of the problem - Defining the problem – Research project planning – Literature search – Information sources – Library resources - Books, journals, abstracts, hand books, procedure manuals, encyclopedias, annual reports, data banks, CDROMS and online literature search – Internet access, websites and directories of information resources - Design of the experimental programme –Variables in the experiments – Materials and methods –Evolution of method –Application of the method - Progress of research – Evaluation of results – Statistical approach – Comparison with existing methodologies – Validation of findings – Research communications – Impact factors of journals

Basic knowledge of legal procedures – IPC, Cr.PC, Indian Evidence Act – Expert witness and his role – Court testimony in forensic cases.

(II). ASSISTANT DIRECTOR, DNA

Written (Objective type) Examination :			
Paper – 1 : General Studies and Mental Ability	150 Questions	150 Mts.	150 Marks
Paper – 2 : Genetics **OR** Bio-Technology **OR** Bio-Chemistry **OR** Microbiology	150 Questions	150 Mts.	300 Marks
Total			450 Marks

PAPER – I :
GENERAL STUDIES AND MENTAL ABILITY

1. General Science – Contemporary developments in Science and Technology and their implications including matters of every day observation and experience, as may be expected of a well-educated person who has not made a special study of any scientific discipline.

2. Current events of national and international importance.

3. History of India – emphasis will be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on AP Indian National Movement.

4. World Geography and Geography of India with a focus on AP.

5. Indian polity and Economy – including the country's political system- rural development – Planning and economic reforms in India.

6. Mental ability – reasoning and inferences.

7. **DISASTER MANAGEMENT** (Source : CBSE Publications)

1. Concepts in disaster management and vulnerability profile of India / State of A.P.
2. Earth quakes / Cyclones / Tsunami / Floods / Drought – causes and effects.
3. Man made disasters - Prevention strategies.
4. Mitigation strategies / Mitigation measures.

PAPER-II
GENETICS

Basic Mechanisms of Inheritance

Mendelism – Laws of Segregation and Independent Assortment with specific examples; Extensions to Mendelism – Dominance, Co-dominance and Incomplete dominance – Penetrance, expressivity and Pleiotropism; Lethals and sub lethal. Epistasis – Modified Mendelin ratios – Multiple Alleles – Eye color in Drosophila, coat color in Rabbits, ABO blood groups in humans. Pseudo alleles – Rh blood group incompatibility – Inheritance of quantitative characters – Polygenes – additive effect, multiple factors – grain color in wheat, corolla length in Nicotiana. Height and weight in man – Genes and Environment – Phenocopies.

Linkage, Recombination and Mapping in Eukaryotes

Discovery of linkage – phases of linkage – Cytological demonstration of crossing over. Recombination frequency and map construction. Detection of linkage in Drosophila and maize. Detection of linkage by test cross; two point cross, three point cross, coincidence and interference. Correlating genetic and cytological maps. Mapping of genes by tetrad analysis – Neurospora. Mitotic recombination in Aspergillus nidulans, Drosophila melanogaster and mitotic maps.

Sex Determination

Sex determination – Mechanisms of sex determination, - Drosophila melanogaster – Bridge's experiment, molecular basis of genic balance theory. Sex chromosomes – heterogametic and homogametic sex, XO – grasshopper, ZZ/ZW birds, XX/XY – Melandrium and man. Sex differentiation and development in man, aberrant sexual development. Sex-linked traits – X and Y – linkage – red and white eye color in Drosophila, hemophilia and color blindness in man. Sex limited and sex influenced traits.

Extra Chromosomal Inheritance

Non-Mendelian Inheritance: Leaf variegation of higher plants, Corren's studies in Mirabilis jalapa, Maternal inheritance – Poky in Neurosopora – Heterokaryon test Maternal influence – Shell coiling in snails, Extra nuclear genes in Chlamydomonas, Mutants showing uniparental inheritance Mapping chloroplast genome in Chalmydomonas Extra nuclear genes in Baker's Yeast : Petite mutants, Genetic mapping of mitochondrial genes in yeast. Male sterility in maize and its use, S-gene in Nicotiana. Independence of cytoplasmic genes from nuclear genes : Inheritance of iojap in Zea mays, Biogenesis of mitochondria, Biogenesis of chloroplasts.

2. Cytogenetics

Cell cycle and Cell Communication

Eukaryotic cell cycle – phases of cell cycle – Restriction points – Cell cycle determining genes chromosome segregation in mitosis – mitotic apparatus, distribution of microtubule organizing centers – Cytokines – Genes affecting mitosis. Chromosome segregation in Meiosis – Formation of synaptonemal complex – Genes affecting Meiosis Cell Communication.

Chromosome structure and chromatin organization

Molecular structure of chromosome – Centromere and Telomere. Specialized chromosomes. Polytene and Lampbrush. Components of Chromatin – Nucleic acids, histones and non-histones, classification and function – Evolutionary importance. Significance of Histone modification in chromatin organization of Nucleosomes, core particle location of H1, organization of nucleosomes in chromatin, Solenodis, loops and scaffolds Nucleosome phasing active and inactive chromatin.

Chromosomal Aberrations (Structural)

Structural chromosomal aberrations – Deletions, Duplications, Inversions – Para and pericentric, translocations, Robertsonian translocations Gene transfer between nonhomologous chromosomes; Translocations – reciprocal translocations, balanced lethals in Oenothera.

Chromosomal Aberrations (Numerical)

Changes in chromosome number : Autopolyploid and Allopolyploid. Aneuploidy-Chromosome non-disjunction at meiosis; Aneuploidy in human. Turner's and Klinefelter's syndrome. Aneuploidy in higher plants-Trisomics and monosomics-cytological and genetic characterization. Evolutionary significance of chromosomal mutations-Gene & karyotypic evolution.

3. Biomolecules and Transport

Biomolecules and Transport across Cell Membrance

Unit 1

Amino acids and Proteins
Classification, structure and characteristics of amino acids.
Acid – Base properties and general reactions of amino acids.
Peptide bond stability and formation. Methods for determining Molecular weight, Amino and Carboxy termini.
Structural organization of proteins – primary, secondary tertiary, quaternary and subunit structure of proteins.

Unit 2

Nucleic acids Structure of puriness, pyramidiness, nucleosides and nucleotides. Stability and formation of phosphodiester bonds.
Watson and Crick Model of DNA. Different forms of DNA – Types of RNA – Structure of t-RNA.

Unit 3

Membrane Transport
Composition and structure of membranes
Peripheral and Integral membrane proteins

Miscelles and liposomes

Unit 4

Movement of molecules across the membranes-Passive diffusion-Membrane channel and pores-Sodium, Potassium channels-Acetyl choline receptor (Chemical controlled channels), Gap junctions-Transporters-Uniport, symport, antiport-Ionophores

4. Microbial Genetics

Genetics of Bacteriophages

Structure and classification Bacteriophages, Lytic cycle – Infection of host cells; formation of viral components; Maturation and release of virus particles. Lysogeny : Nature of lysogeny : λ-phage, Integration of viral genome into host genome Lysogenic stage and prophage cycle; Factors governing lysogeny.

Genetics of Eukaryotic Viruses

General features of Eukaryotic viruses, DNA virues, Adeno viruses, Herpes, SV40, Papilloma viruses, Cauliflower mosaic viruses, Baculo viruses, RNA viruses, Retro viruses – Rous Sarcoma viruses and HIV viruses, Tobacco Mosaic viruses, Polio viruses and Rio viruses

Bacterial Recombination and Mapping

Identification and selection of bacterial mutants, Gene Transfer in bacteria – Transformation : Discovery of transformation – Competence of bacterial cells; mechanism of transformation; Gene mapping by transformation. Transduction : Generalized transduction, Co-transduction and Linkage. Mapping by Co-transduction. Specialized transduction – Formation of specialized transducing particle from a λ-lysogen. High frequency of transducing lysates Specialized transducing phage as a cloning vehicle.

Mapping by Conjugation

Conjugation-Unidirectional gene transfer – F^+ and F^- H fr strains and gene mapping by recombination frequencies and interrupted mating experiment, F-duction

5. Biometry and Population Genetics

Theory of Probability and Probability Distribution

Theory of Probability and Probability Distribution; Mutually Exclusive events – Addictive theory, Independent events – Multiplication theory. Random variable – Mean and Variance. Probability distribution with examples. Binomial distribution with examples. Poisson distribution with examples. Normal distribution with examples and problems.

Analysis of Quantitative and Quantitative Variables

Test of Hypothesis – Null hypothesis, Alternative hypothesis, Level of significance, confidence intervals and confidence limit
Application of Chi-square test – testing for genetic segregations, linkage and heterogeneity with examples and problems.
Small sample test, t – test, testing for single mean, two sample means, paired t – test One-way ANOVA, Two-way ANOVA
Simple correlation and regression, Test of significance of correlation and regression coefficients.

Establishment of Hardy-Weinberg Equilibrium and Departure from Equilibrium

Genotype and gene frequency, Random mating; Hardy-Weinberg equilibrium – properties of Hardy-Weinberg equilibrium. Estimation of gene and genotype frequencies: Dominance, Co-dominance, Multiple alleles, sex-linked loci.
Evolutionary forces – Dispersive and systematic forces, Change in gene frequency under mutation – resource mutation, recurrent mutation pressure. Selection – Different types of selection, Balance between selection and mutation with examples, Inbreeding and assortative mating. Calculation of Inbreeding coefficient (F) from pedigrees, Effect of inbreeding on gene and genotypic frequencies.

Genetics of Quantitative Characters and Phylogenetic Analysis

Population mean, average effect, breeding value, dominance deviation interaction deviation., Components of variance – phenotypic variance, Additive and dominant variance, interaction, variance repeatability. Genetic covariance – Offspring and one parent, Offspring and mid parent, half sibs, full sibs. Heritability – Estimations of heritability from genetic covariance and ANOVA, Phylogenetic analysis UPGMA (Unweighted paired group method of average) method

6. Molecular Genetics

Genetics Information

Process of DNA replication, Replication in prokaryotes and eukaryotes
DNA Damage and Repair, Molecular mechanisms of mutation – transition, transversion, frame shift and nonsense mutations, Causes of DNA damage, Repair mechanisms – photo reactivation, excision repair, Post replication repair,

Organization of Genes

Structure of prokaryotic genes – organization of prokaryotic genes into operons, Structure of eukaryotic protein coding genes, Structure of eukaryotic non coding RNA genes

Gene Expression : Transcription

Mechanism of transcription in prokaryotes
Regulation of prokaryotic gene expression – Lac and Tryp operon
Mechanism of transcription of protein coding genes in eukaryotes
Transcriptional regulation of eukaryotic gene expression
Post transcriptional gene silencing – SiRNA, Small RNA, and Micro RNA
Post transcriptional modification
Transcription and processing of non coding RNA

Gene Expression : Translation

Genetic code – Characteristics, universal and alternate genetic codes, codon usage and bias.
Components of translational machinery – Ribosomes, tRNA, aminoacyl tRNA synthetases and translation factors
Process of translation – initiation, elongation and termination

7. Immunogenetics

Basic Immunology

Immunity – Types of Immunity, Innate and Acquired Immunity. Cells of the Immune System: The B and T lymphocytes; T cell subsets; The antigen – presenting cells, Organs of the Immune system : Primary lymophoid organs (Bone Marrow and Thymus); Secondary lymphoid organs (lymph nodes, spleen and mucosal – associated lymphoid tissue), Antigens : conditions for antigenicity of a substance; chemical nature of antigenic determinants; Haptens and hapten-carrier conjugates

Immunoglobulins : Structure and Functions

Basic structure of Immunoglobulin; The role of multiple myeloma in understanding Ig structure, Fine structure of Immunoglobulin : Immunoglobulin domains – variable region and constant region domains
Immunoglobulin classes : IgG, IgM, IgA, IgD and IgE; functions of Ig classes
Organization and expression of Immunoglobulin light and heavy chain genes
Monoclonal antibodies; formation and selection of hybrid cells; production of monoclonal antibodies and their uses

Major Histocompatibility Complex

General organization and inheritance of MHC : MHC haplotypes
The structure of MHC class I and class II molecules : organization of MHC class I and class II genes, peptide binding of MHC molecules
Polymorphism of MHC class I and class II molecules; the role of HLA typing in organ transplantation, Cellular distribution of MHC molecules; MHC molecules and immune responsiveness

The Humoral and Cell – Mediated Immune Responses

Antigen processing by antigen – presenting cells.
The structure and functions of T-cell receptors; the TCR-Peptide-MHC complexes.
B-cell activation and proliferation by Thymus – independent and Thymus – dependent antigens : in vivo sites for induction of humoral response : B cell differentiation, class-switching and generation of plasma cells and memory cells.
Cell-mediated Immune Response: General properties of effector T cells; Direct cytotoxic response, Experimental assessment of Cell – mediated cytotoxicity, Delayed types of hypersensitivity (DTH) and cytokines involved in DTH.
Autoimmunity and Auto-immune disorders – Acquired Immunodeficiency Syndome (AIDS).

8. Recombinant DNA Technology

Restriction enzymes and cloning vectors

Host controlled restriction modifications; Restriction endonucleases, types and classification. Modifying enzymes used in molecular cloning, Methylases; Polymerases, Ligases, Kinases, Phosphatases, Nucleases Plasmid and lambda phage vectors Cosmid vectors Yeast and Baculovirus vectors

Construction of Genomic and cDNA Libraries

Strategies for DNA cloning
Strategies for construction of genomic libraries
Strategies for construction of cDNA libraries
Advantages of cDNA libraries
In vitro amplification of target sequences – PCR

Selection and Analysis of Recombinant Clones

Labelling of nucleic acids and immunological probes
Selection of recombinant clones : Hybridization techniques (Southern, Northern, Western, North-Western, and Zoo blots) Colony hybridization and library screening
Isolation of individual genes by complementation assay and contig assembly (positional cloning by chromosome walking, chromosome jumping)

Analysis of Recombinant Clones

Mapping of restriction sites
S 1 mapping
DNA sequencing methods
Screening of cloned genes (Hybrid arrest and hybrid released translation)
Site directed mutagenesis
Applications of rDNA technology

9. Human Genetics

Chromosomal Basis of Genetics Disorders

Karyotypes and identification of chromosome variation
Chromosome pathology of autosomes and allosomes.
Chromosome instability syndromes.
Clinical significance of sister chromatid exchanges.

Gene Transmission in Families

Criteria for determining inheritance pattern from pedigrees
Segregation analysis of monogenic conditions – complete and incomplete ascertainment
Analysis of multifactorial condition – Threshold model and estimation of heritability
Twin studies in genetic ananlysis, Genetic heterogeneity

Biochemical Basis of Genetic Disorders

One gene – one enzyme hypothesis Garrod's observations
Metabolic disorders and experimental approaches – Direct and Indirect approaches for prenatal and heterozygote detection
Metabolic disorders – Interallelic and intrallelic heterogeneity.
Enzyme defects – amino acid metabolism

Linkage Analysis

Detection of Linkage
Estimation of linkage – Y statistic, sib pair analysis, Lod score estimation, homozygosity mapping.
(IBD)
Test of linkage of genes with reduced penetrance and epistasis.
Resolution of genetic heterogeneity by linkage analysis
Linkage disequilibrium

10. Bioinformatics

Biology databases

Bioinformatics data
Biological databases – types, design, file formats, access tools with examples.
Public and bioinformatics databases
Nucleotide sequence databank (GenBank, DDBJ, EMBL, MGDB, GSX, NDB)
Protein databank (SWISS-PROT, TrEMBL, PIR)
Database searching, search enines
General purpose search engines like Google, Alta Vista
Sequence match engines like FASTA, BLAST and BLAST derivatives

Comparison methods in Bioinformatics

Basics of sequence alignments – Match, mismatch, gaps, scoring alignments, gap penalty, protein versus DNA sequence alignment.
Pair – wise alignment algorithms-Needleman and Wunch algorithm, Smith Watermann algorithm
Multiple sequence alignment – progressive alignment, iterative alignment
Homology search-BLAST algorithm, FASTA algorithm
PAM and BLOSUM matrices

Genomic and Proteomic Bioinformatics

Finding gene in genomes, genome maps and markers
Bioinformatics for understanding genome variation
Protein structure prediction and classification
Bioinformatics in support of proteomics research

Applications of Bioinformatics

Medical application of Bioinformatics-disease genes, drug targets,
Pharmacogenomics, drug designing
Structural biology – homology modeling of proteins
Bioinformatics for micro array designing and transcriptional profiling
Bioinformatics for phylogenetic analysis of genes
Bioinformatics data – Nucleic acid sequence, protein sequence, protein structure,
Genomic, proteomic and metabolomic information.
Bioinformatics databases – Types, design, file formats, access tools with examples
Bioinformatics tools and resources – free online tools, downloadable free tools,
software packages, internet, Bioinformatics books and journals, Bioinformatics web-portals

BIO-TECHNOLOGY

UNIT-1 Biochemistry
Amino acids and Protein, Carbohydrates & Lipids, Enzymes, Vitamins, Harmones, Nucleic acids

UNIT-2 Cell Biology
Tools & Cytological techniques, Cell : Structure & Function, Cell cycle, Division & Cancer, Cell signalling

UNIT-3 Molecular & Cytogenetics
DNA : Replication, Transcription, Translation, Protein synthesis, Gene Expression & Regulation of gene expression, Chromosomal basis of Inheritance, Geneticbasis of Inheritance (Mendelian & Population Genetics)

UNIT-4 Biotechnology
Proteomics, Genomics (Genome & Human genome project), Genetic engineering,Cloning, Transgenics, Plant tissue culture, Plant & Animal breeding, Genetic improvement and disease control, Diagnostics aids

UNIT-5 MicroBiology & Immunology
Bacteria, Viruses, Fungi, Protozoa, Immunology

UNIT-6 Human Molecular Genetics
Human Chromosomes
Normal human karyotype : Flow Karyotyping (Quantification on DNA of individualchromosomes)
Chromosomal aberration:
Numerical : Aneuploidy, Polyploidy (Eg. : Turner, Down & Klinefelter Syndromes).
Structural : Translocation, Duplication, Inversion, Ring Chromosome and Deletion Genetic Diseases and Inheritance Pattern
Multiple alleles: Definition, Color loci in Corn, Eye color in Drosophila, Blood groups & Rh factor in Human
Gene interactions:
Epistasis – Dominant Epistasis,Recessive Epistasis Supplementary genes Duplicate Dominant genes, Duplicate Recessive genes,Dominant Recessive interaction, Sex determination, Environment and Sex determination, Hormonal control of sex determination and dosage compensation.
Pedigree studies
Immunogenetics : Genetics of normal immune system. Inherited immunodeficiency, Eg. X-linked agammaglobulinaemia. Major Histocompatibility Complex – Study of Twins (MHC), HLA disease associations. Tranplantation, graft –versus-host disease.
Pharmacogenetic – definition, gene loci influencing drug metabolism and pharmacogenetic interactions.
Prenatal Diagnosis, Eugenics and Genetics and Society :
(i) Human genome project : (ii) Forensic science ; (iii) DNA finger printing ; (iv) Human health care and (v) Gene therapy.

BIO-CHEMISTRY

1. CHEMISTRY, METABOLISM OF PROTEINS AND LIPIDS

Chemistry of Amino Acids, Peptides and Proteins. Metabolism of Amino Acids, Peptides and Proteins. Chemistry of Lipids and Porphyrins. Metabolism of Lipids and Porphyrins.

2. CHEMISTRY, METABOLISM OF CARBOHYDRATES AND NUCLEIC ACIDS

Chemistry of Carbohydrates. Metabolism of Carbohydrates. Chemistry and Metabolism of Nucleic Acids. Chemistry and Metabolism of Vitamins.

3. BIOANALYTICAL TECHNIQUES

Spectroscopy, Chromatography, Centrifugation and Electrophoresis, Microscopy and Tracer Techniques

4. BIOENERGETICS AND CELL BIOLOGY

Bioenergetics, Cell Structure of Prokaryotes, Cell Structure of Eukaryotes, Methods of Cell Study

5. ENZYMOLOGY

Enzymes and coenzymes, Enzyme Kinetics, Catalytic mechanisms, Enzyme regulation

6. MOLECULAR BIOLOGY

DNA replication, DNA repair, Transcription and Translation, Protein sorting, targeting and degradation

7. BIOCHEMICAL GENETICS & MODEL ORGANISMS

Mendelian Genetics, Linkage and Mapping, Bacterial Genetics, Model Organisms

8. CELL – CELL COMMUNICATION

Extracellular matrix and cell surface, Cell signaling, Signal transduction and cancer, Signal transduction in bacteria and plants

9. REGULATION OF GENE EXPRESSION & RECOMBINANT DNA TECHNOLOGY

Gene Regulation in prokaryotes and viruses, Gene Regulation in eukaryotes, Recombinant DNA technology, Genetic engineering

10. IMMUNOLOGY

Basic immunology, Immune response, Transplantation & Applied immunology, Disorders of the immune system

11. VIROLOGY AND CLINICAL BIOCHEMISTRY

Prokaryotic viruses, Eukaryotic viruses, Clinical diagnosis, Pathophysiology & Clinical enzymology

12. ENDOCRINOLOGY, PHYSIOLOGY AND NUTRITION

Endocrine systems, Hormones, Body fluids & clinical testing, Physiology of body fluids and Nutrition

13. BIOTECHNOLOGY

Microbial biotechnology, Plant biotechnology, Animal biotechnology, Protein engineering

14. BIOSTATISTICS, COMPUTERS AND BIOINFORMATICS

Biostatistics, Computers and Bioinformatics, Genomics, Transcriptome and Proteomics

MICROBIOLOGY

MICROBIOLOGY

General Microbiology: History of Microbiology, Microscopy, Structure of microbial cells, Spontaneous generation and germ theory of diseases, Prokaryotic cell, Eukaryotic cell, Organization and function of cellular organelles, Methods of sterilization, Isolation methods (Methods of pure culture isolation, Enrichment culturing techniques, single cell isolation, and pure culture development). Microbiological media and its types, culturing and cultivation of microorganisms. Preservation and Maintenance of Microbial cultures. Identification methods and classification of principles of bacterial taxonomy and classification, Importance of Algae and Fungi, Applications of microbiology in Industry, Agriculture and medicine.

Virology: Structure and Classification of bacterial, plant and animal viruses, Methods of cultivation, detection, Propagation and maintenance of viruses. Some important viruses: TMV, HBV, HIV, T2 phase. Replication of viruses, Tumor viruses, Interferon.

Microbial Physiology: Microbial nutrition, Respiration and fermentation, Bacterial growth and growth curve.

Immunology: T cell, B cell, Immune response, Types of immunity, prophylaxis, vaccines. Major histocompatibility, complex and immunoglobulins. Immunological methods, Antigen-Antibody reactions, Adjuvants, Tumors, Hybridoma technology.

Chemotheraphy: Types of antimicrobial agents and mode of action. Therapeutic agents, Chemical, non-medicinal antimicrobials- sanitizers, disinfectants, antiseptics. Antibiotics.

Biochemical Techniques: Enzymes, Enzymes nomenclature, Enzyme kinetics, Regulation of enzyme activity, Optical methods, Separation methods.

Microbial genetics: Nucleic acids Structure and Replication. Transcription. Translation. Mutations, Benzer's fine structure. Bacterial Transformation, transduction and conjugation Plasmids, PCR, Cloning, Recombinants. Molecular markers. Gene chip and microarays.

Industrial microbiology: Exploitation of microbes in industry. Screening, Fermentation, fermenters. Types of fermentations processes Scale-up of fermentations. Up and Down stream process. Strain development. Fermentation productions-Ethanol, Beer, Wine and other alcoholic drinks, aminoacids, antibiotics, organic acids, vitamins, enzymes, biotransformations, probiotics, and solvents. Principles of vaccine production and types of vaccines. Industrial Quality control and assurance.

Agricultural and veterinary microbiology: Ecological significance. Soil Microorganisms, Mineralization, Soil humus formation, Nitrogen metabolism, Phosphate solublization. Bio-fertilizers, Biopesicides, Rumen microbiology, termite microbial communities, Microbes in the production of energy from agricultural and domestic wastes. Rhizosphere, Mycorrhizae, Phyllospheree.

Medical Microbiology: Normal flora, Bacterial and viral infections (Air born, water born, food born, insect born and zoonotic), Mycosis, Medical diagnostics and Toxins.

Microbiology of Food and Environment: Fermented foods, Spoilage of foods, Food preservation methods, Food poisoning, Mycotoxins. Microbial degradation, pollution, sewage treatment. Bioremediation.

(III). ASSISTANT DIRECTOR, FORENSIC PSYCHOLOGY:

Written (Objective type) Examination :			
Paper – 1 : General Studies and Mental Ability	150 Questions	150 Mts.	150 Marks
Paper – 2 : Sociology **OR** Criminology **OR** Psychology **OR** Criminal Justice	150 Questions	150 Mts.	300 Marks
Total			450 Marks

PAPER – I :
GENERAL STUDIES AND MENTAL ABILITY

1. General Science – Contemporary developments in Science and Technology and their implications including matters of every day observation and experience, as may be expected of a well-educated person who has not made a special study of any scientific discipline.

2. Current events of national and international importance.

3. History of India – emphasis will be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on AP Indian National Movement.

4. World Geography and Geography of India with a focus on AP.

5. Indian polity and Economy – including the country's political system- rural development – Planning and economic reforms in India.

6. Mental ability – reasoning and inferences.

7. **DISASTER MANAGEMENT** (Source : CBSE Publications)

1. Concepts in disaster management and vulnerability profile of India / State of A.P.
2. Earth quakes / Cyclones / Tsunami / Floods / Drought – causes and effects.
3. Man made disasters - Prevention strategies.
4. Mitigation strategies / Mitigation measures.

PAPER-II

SOCIOLOGY

General Sociology

1. **Scientific Study of Social Phenomena**: The emergence of Sociology and its relationship with other Social Sciences. Sociology as a Science; Science and Social behaviour; the problem of objectivity; the scientific method and design of Sociological Research; techniques of data collection and measurement including participant and non-participant observation, interview schedules and questionnaires and measurement of attitudes. Sampling, Reliability and validity.
2. **Pioneering contributions to Sociology**: The seminal ideas of Durkheim, Weber, Radcliffe Brown, Malinowski, Parsons, Merton and Marx.
   a) Durkheim: Division of labour, Social fact, religion and society.
   b) Max Weber: Social action, types of authority, Bureaucracy, Protestant ethic and the spirit of capitalism, ideal types, Social action.
   c) Karl Marx: Historical materialism, mode of production, alienation and class struggle.
   d) Tarcott Parson: Social system and pattern variables.
   e) Robert K. Merton: Latent and manifest functions, anomic, Conformity and deviance, reference groups.
3. **The individual and society**: Individual behaviour, Social interaction, society and social groups, Social system, Status and role; culture, personality and socialization and social control, role conflict.
4. **Social Stratification and Mobility**: Social differentiation and stratification, Attributes of social stratification, theories of stratification, different conceptions of class and caste; Class and Society, types of mobility, intergenerational mobility, Intra generational mobility, Horizontal mobility, open and closed models of mobility.
5. **Family, Marriage and Kinship**: Structure and functions of family; structural principles of kinship, family and descent. Types and forms of marriage Change in marriage and family, marriage and divorce.
6. **Formal organizations**: Elements of formal and informal structures; bureaucracy, modes of participation – democratic and authoritarian forms; voluntary associations.
7. **Economic System**: Concepts of property; social dimensions of division of labour and types of exchange; social aspects of pre-industrial and industrial economic system; Industrialization and change; Changes in the spheres of familial, educational, religious, political and stratificational, Social determinants and consequences of economic development
8. **Political System**: The nature of Social power – Community power structure, power of the elite, class power, organizational power, power of unorganized masses, power, authority and legitimacy, power in democracy and in totalitarian Society; Political parties and voting behaviour; Democratic and authoritarian modes of Political Participation.
9. **Educational System**: Social orgins of students and teachers, Stratification and education, equality of educational opportunity, Social aspects of mass education, Problems of Universalization of primary education; role of community and state intervention in education, education as a medium of cultural reproduction, Indoctrination, education and modernization, education and social control, education and social change.
10. **Religion**: Origins of religious beliefs in premodern Societies, the sacred and the profane; social functions and dysfunctions of religion. Religion, magic and science, Monistic and pluralistic religion, organized and unorganized religions and changes in religion; concept of secularization.
11. **Social change and Development**: Social structure and social change. Continuity and change as fact and as value. Processes of change, Factors of Social change, Theories of change; types of Social change, Social disorganization and social movement; Types of social movements, Social movement and change, Social policy and social development.

SOCIETY OF INDIA

1. **Historical Foundations of the Indian Society:** Traditional Hindu Social organization, Socio-cultural dynamics through the ages, especially the impact of Buddhism, Islam and modern West; factors in continuity and change.
2. **Social stratification:** Caste system and its transformation aspects of ritual, economic and caste status; cultural and structural views about caste, mobility in caste, issues of equality and social justice, caste among the Hindus and non-Hindus; casteism, the Backward Classes and the Scheduled Castes; untouchability and its eradication; agrarian and industrial class structure.
3. **Family, marriage and Kinship:** Religious variations in kinship system and its socio-cultural correlates; changing aspects of Kinship; The Joint family-its structural and functional aspects and its changing form and disorganization; Marriage among different ethnic groups and economic categories, its changing trend and its future; impact of legislation and socio-economic change upon family and Marriage; intergenerational gap and youth unrest; changing status of women.
4. **Economic System:** The Jajmani System and its bearing on the traditional society; market economy and its social consequences; Occupational diversification and social structure; professions, Trade Unions; Social determinants and consequences of economic development; economic inequalities; exploitation and corruption.
5. **Political System:** The functioning of the democratic political system in a traditional society; Political parties and their social composition; Social structural origins of political elites and their social orientations, decentralization of power and political participation. Panchayat Raj and Nagarpalikas and 73rd and 74th Constitutional amendments.
6. **Educational System:** Education and society in the traditional and in the modern contexts; Sociological factors for educational inequality; Education and social mobility; Educational problems of women, the Backward Classes, Scheduled Castes and Scheduled Tribes. Directive principles of State policy and Primary education, Total literacy campaigns.
7. **Religion:** Demographic dimensions, geographical distribution; and neighbourhood living pattern of major religious categories; intereligious interaction and its manifestation in the problems of conversion; Minority status and communal tensions; secularism; Tribal Societies and their integration; distinctive features of Tribal communities; Tribe and Caste; acculturation and integration.
8. **Rural social system and community development;** Socio-Cultural dimensions of the village community; Traditional Power structure, democratization and leadership, poverty, indebtedness and bonded labour, social consequences of land reforms. Community Development programmes and other planned development projects; Green Revolution; new strategies; to rural development.
9. **Urban social organisation:** Continuity and change in the traditional bases of social organisation namely family, marriage, kinship, caste and religions in the urban context; stratification and mobility in urban communities; ethnic diversity and community integration; urban neighbourhoods, rural-urban differences in demographic and socio-cultural characteristics and their social consequences. Urbanization in India, Urban environment, housing, slums and unemployment, programmes for urban development.
10. **Population Dynamics**: Socio-cultural aspects of sex and Age structure; Marital status, fertility and mortality: the problems of population explosion; Socio-psychological, cultural and economic factors in the adoption of family planning practices
11. **Social change and modernization**: Problem of role conflict, youth unrest – intergenerational gap-changing status of women. Major sources of social change and Resistance to change; Impact of West, reform movements; social movements; industrialization and urbanization; pressure groups, factors of planned change – Five year plans, legislative and executive measures; process of change; sanskritization, Westernization and modernization – Means of Modernization, Mass media and education; problems of change and modernization – structural contradictions and breakdowns; current social Evils – Corruption and Nepotism, smuggling – Black money.

CRIMINOLOGY

1. Introduction to Criminology:

Definition, nature and scope of criminology
Criminology as a science
Relation between Criminology and other Social Sciences
Crime, criminal and criminology
Crime statistics in India

2. Concept of Crime:

Meaning, definition and elements of crime
Legal and social definition of crime
Types of crimes and Classification of crimes
Traditional crimes
Modern crimes
Socio-economic crimes
Environmental Crimes
Cyber crimes
Terrorism and insurgency
Crimes by agencies of he State
Victimless Crimes: Alcoholism, Drug addiction, Beggary. Prostitution, Suicide
Family Centered Crimes: Dowry, Domestic Violence, Child Abuse

3. Criminal Law and its administration:

Substantive criminal law – An overview
Offences against property and person
General Exceptions
Evidence in criminal proceedings
Confessions, dying declaration and expert opinion
Criminal courts in India and criminal justice system
Classification of offences
Cognizable and non-cognizable offences
Compoundable and Non-compoundable affiances
Bailable and non bailable offences
Major stages in the criminal justice process
Complaint, FIR, Investigation, Arrest, Search and Seizure
Pre-trial procedure
Trial procedure
Sentencing process

4. Schools of Criminology:

Pre-classical School
Classical School
Neo-classical School
Positive School
Psychiatric School
Cartographic School
Sociological School
Socialist School
Radical Criminology

5. Crime Causation and Theories of Criminal Behavior:

a) Individual-centric causes
Physical type – Criminoid – Criminal atavism – Phrenology
Intelligence and mental deficiency – Feeblemindedness
Heredity
Chromosomal abnormality and criminality
Endocrine disorders
Sex and crime
Age and crime
Alcoholism – Narcotic drugs
Epilepsy
Physical environment and Ecology
Race and crime

b) Society – centric causes
Social disorganization
Mobility
Theory of Differential Association
Anomie
Labelling
Gang delinquency
Family
Neighbourhood
Religion
Education
Mass media – Movies – Pornography
Economic factors – poverty – affluence
Bonger's theory

War and immigration
Political theories of crime causation
Multiple factor approach

6. White – collar Crimes:
Nature and definition of white – collar crimes
Types of white – collar crimes
White – collar crimes in professions
Growth of white – collar criminality

7. Organised Crime:
Characteristics of organized crime
Types of organized crime
Remedies against organized crime
Organised crime in India

8. Police:
Functions of the police
Police structure and organization in India
Difficulties of the police
Difficulties regarding procedure and evidence
Police – public relations
Police Reforms

9. Punishment:
Concept of punishment
Theories of punishment
Kinds of punishment
Capital punishment in India
Views of Abolitionists and Receptionists

10. Prisons:
Prison system in India
Prison reforms
Prison labour
Correctional programmes in jails
Rights of prisoners
Open Air prisons
Aftercare services

11. Probation and parole:
Concept of Probation – origin, development and object
Advantages of probation
Selection of offenders for probation
Salient features of Probation of Offenders Act
Parole – concept and object
Supervision in probation and parole
Indeterminate sentence

12. Juvenile Delinquency:
Concept of Juvenile Delinquency
Causes of juvenile delinquency
United Nations Standard Minimum Rules for Juvenile Justice
Salient features of the Juvenile Justice (Care and Protection of Children) Act
Methods of treating juvenile delinquents
Custody in juvenile institutions
Observation homes, Special homes and fit institutions
Preventive programmes
Neglected juveniles
Children in need of care and protection

13. Prevention of Crime:
Identification of potential delinquency
Kinds of programmers
Habitual offenders
Recidivism – causes and remedies

14 Victims of Crimes:

Role of victim in crime
Victim – offender relationship
Victimizing factors
Problems of victims
Types of victims
Victim's Rights
Rehabilitation of victims
Compensation to victims
Victim compensation schemes in India
Victimology – Emerging trends

PSYCHOLOGY

1. Scientific approach to Psychology.
   Roots of modern psychology

   Impact of other sciences on the development of psychology

2. Nature of psychological research:
   Methods of psychological research – Observational method Survey methods – questionnaire and interview.

   Case history method

   Experimental method.

   Advantages and limitations of various methods.

3. Origin and development of behaviour:
   Genes and their role

   Constitutional and endocrinal functions

   Early childhood experiences and their impact on development

   The concept of maturation

   The characteristics of the developmental processes

   Experimental studies on the role of heredity and environment

   Nature-nurture controversy

   The role of social and cultural factors in the process of development.

4. Cognitive processes:
   Perception

   Organic basis of the perceptual process

   Psychophysical laws

   Gestalt Theory of perception

   Perceptual constancies

   Perceptual abnormalities

   Perceptual defence

   Effect of need on perception, perception and personality.

5. Learning:
   Thorndike's laws of learning

   Classical and instrumental conditioning

   Skinner's concept of reinforcement

   Hull's drive reduction theory

   Cognitive theories of learning – Tolman and Razran

   Gestalt approach to learning

   Programmed learning

6. Memory:
   Measurement of memory

   Early experiments – Ebbinghaus

   Short – term memory and long – term memory Forgetting

   Methods of improving memory.

7. Thinking:
   Language and thought

   Convergent and divergent thinking

   Concept formation

   Problem solving

Theories of the development of thinking in children.

8. Intelligence:
Binet's contribution

Theories of intelligence

Measurement of intelligence

Intelligence tests

Aptitude and its measurement

The concept of social intelligence.

9. Motivation:
Motivation – need, drive

Theories of motivation – psychoanalytical theory, need hierarchy theory.

Level of aspiration and achievement motivation.

10. Personality:
The concept of personality

Trait and type approaches

Factorial and dimensional approaches

Theories of personality – Field, Allport, Cattel, Lewin

Social learning theories

The Indian approach to the study of personality

The concept of Gunas

Measurement of personality

The role of projective tests.

11. Attitudes and values:
Formation of attitudes

Theories of attitudes

Theories of attitude change

Attitude scales

Values

Motivational Properties of values.

12. Recent trends:
Psychology and the computer

Cybernatic model of behaviour

Simulation studies in psychology

Altered states of consciousness – sleep, dream, meditation, hypnotic trance, drug induced changes

Sensory deprivation.

Human problems in aviation and in space flight.

13. Models of man:
The mechanical man

The organic man

The organizational man

The Humanistic man

An integrated model of man.

14. Individual differences:
Types of psychological tests. Construction of psychological tests. Requirements of a good psychological test. Limitations of psychological tests.

15. Psychological Adjustment:
The concept of adjustment. Barriers to adjustment.

Reactions to adjustment

Defence mechanisms

The concept of mental health

Community mental health.

16. Psychological disorder:
Classification of disorders

Neurotic, psychotic and psycho physiological disorders

Psychopathic personality

The problems of anxiety, depression and stress.

17. Therapeutic approaches:
Psychoanalytic

Behaviour therapy

Client-centered therapy

Cognitive therapy

Rational-emotive therapy

Group therapy.

18. Application of psychology to industrial and organizational problems:
Personnel selection

Training and training methods

Theories of work motivation

Job designing

Man-machine systems

Leadership and its training.

19. Small groups:
Properties of group

Groups at work

Group cohesiveness

Interaction process analysis

Interpersonal relations.

20. Social Change:
Characteristics of social change

Psychological basis of change

Planning for change

Change proneness

Resistance to change

Problems of change in the rural context.

21. School Psychology:
The learner

School as an agent of socialization. Problems relating to adolescents in learning

Gifted children

Creativity

Retarded children and problems related to their training.

22. Disadvantaged Groups:
Types of disadvantages – Social, cultural and economic

Psychological consequences of disadvantage

Deprivation

Educating the disadvantaged groups

Problems of motivating the disadvantaged.

23. Social integration:

Prejudice its nature and manifestation

Ethnic prejudice

Ameolioration of prejudice

Social tensions – their causes and consequences

Reducing social tensions

Strategies to achieve social integration

National character.

24. Psychology and Economic development:
Identification and promotion of entrepreneurship

Technological change and its impact on human behaviour.

25. Management of information and Communication:
Psychological factors information management

Information overload

Psychological basis of effective communication

Mass media and its role in social change

Impact of television

Psychological basis of effective advertisement.

26. Problems of contemporary society:
Stress

Management of stress

Alcoholism

Drug addiction

Juvenile delinquency

Rehabilitation of the deviant

Aging and problems of the aged.

CRIMINAL JUSTICE

1. The Development of criminal Law in India
2. The nature and scope of offences as stated in the Indian Penal Code
3. The external elements of an offence-the concurrence of act and intent; negligence.
4. Elements of No-Fault liability, strict liability and vicarious liability.
5. Territorial scope of criminal law
6. Exemptions from operation of criminal law
7. Theories of punishment
8. Rights of accused.
9. Rights o f the victims
10. Criminal courts in India
11. The criminal Law Enforcement agencies in India;
12. Role of Police
13. Reports on reforms to criminal Laws-
    Law Commission Reports ;
    Malimath Committee Report ;
    Reports of the National Police Commission
    Ribeiro Committee on Police Reforms
14. The recent Amendments to Code of Criminal Procedure.
15. The recent Amendments to the Indian Penal Code by the Information Technology Act

(IV). ASSISTANT DIRECTOR, FORENSIC ENGINEERING:

Written (Objective type) Examination :			
Paper – 1 : General Studies and Mental Ability	150 Questions	150 Mts.	150 Marks
Paper – 2 : Mechanical Engineering **OR** Structural Engineering **OR** Civil Engineering **OR** Production Engineering	150 Questions	150 Mts.	300 Marks
Total			450 Marks

PAPER – I :
GENERAL STUDIES AND MENTAL ABILITY

1. General Science – Contemporary developments in Science and Technology and their implications including matters of every day observation and experience, as may be expected of a well-educated person who has not made a special study of any scientific discipline.

2. Current events of national and international importance.

3. History of India – emphasis will be on broad general understanding of the subject in its social, economic, cultural and political aspects with a focus on AP Indian National Movement.

4. World Geography and Geography of India with a focus on AP.

5. Indian polity and Economy – including the country's political system- rural development – Planning and economic reforms in India.

6. Mental ability – reasoning and inferences.

7. **DISASTER MANAGEMENT** (Source : CBSE Publications)

1. Concepts in disaster management and vulnerability profile of India / State of A.P.
2. Earth quakes / Cyclones / Tsunami / Floods / Drought – causes and effects.
3. Man made disasters - Prevention strategies.
4. Mitigation strategies / Mitigation measures.

PAPER – II

MECHANICAL ENGINEERING:--

1.THERMODYNAMICS:

Basic concepts, Open and closed systems. Heat and work, Zeroth, First and second law, application to flow and non-flow processes. Entropy;, Availability, Irreversibility, T-S relations, Clapery on and real gas Equations. Properties of ideal gases and vapours. Air standard cycles, Two stage air compressor, CI and SI engines, Valve travel diagram, Pre ignition, Detonation and Diesel knock, Fuel injection, Carburetion, Super charging, Turbo prop and Rocket engines. Cooling, Emission and Control. Measurement of calorific value of fuels. Conventional and Nuclear fuels.

2. HEAT TRANSFER:

Modes of heat transfer. One-dimensional steady and unsteady conduction. Composite slab and equivalent resistance. Heat dissipation from extended surfaces. Heat exchangers, Over all heat transfer coefficient, Empirical correlations for heat transfer ;in laminar and turbulent flow, Heat transfer in free and forced convection. Thermal boundary layer over a flat plate. Fundamentals of diffusive and convective mass transfer. Black body and fundamental concepts of radiation. Shape factor, Network analysis.

3. REFRIGERATION AND AIR CONDITIONING:

Heat pump, Refrigeration cycles and systems, Refrigerants, Condensers, Expansion devices, Psychrometry, Charts and application to air conditioning, Sensible heating and cooling. Effective temperature, Comfort indices, Load calculations. Solar refrigeration, Duct design.

4.STEAM GENERATORS AND TURBINES:

Fire tube and water tube boilers. Binary vapour system. Flow of steam through nozzles and Diffusers. Dryness fraction, Condensation. Various types of turbines, Compounding, Velocity triangles, Partial admission, Reheat, Regeneration, Efficiency and Governance. Gas Turbines, Role of Mach number.

5.THEORY OF MACHINES:

Kinematic and DYNAMIC ANALYSIS OF PLANAR MECHANISMS CAMS Gears and Gear trains. Fly wheels, Governors, Balancing of rotating masses, Balancing of single and ;multi cylinder engines. Linear Vibrations of mechanical systems, Transmissibility and Vibration Isolation. Critical speeds. Two rotor and Three rotor systems. Automatic controls - Order and Type of system, 2^{nd} order system and its characteristics. Frequency analysis. Stability, Routh-Hurwitz criterion, Nyquist criterion.

6.MACHINE DESIGN:

Theories of failure, Design of Cotter joint, Keys, Splines, Welded Joints, Threaded fasteners, Bolt of uniform strength, Screw Jack. Design of Bearings, Couplings, Clutches, BELT DRIVES and Spur gear system. Hydrodynamic and Antifriction bearings. Design of shafts for combined loads. Helical and Leaf Springs. Thin and Thick walled pressure vessels.

7. ENGINEERING MATERIALS:

Basic concepts of structure of solids. Crystalline Materials. Defects in Crystalline materials. Alloys and Binary Phase diagrams. Structure ;and properties of common Engineering Materials. Heat treatment of Steels. Plastics, Ceramics and Composite materials. Common applications of various materials.

8. PRODUCTION ENGINEERING:

Metal Forming: Basic principles of Forging, Drawing and Extrusion. High energy rate forming. Powder Metallurgy.

Metal Casting: Die casting, Investment Casting, Shell molding, Centrifugal casting, Gating and Rising design, Melting furnaces.

Fabrication processes: Principles of Gas, Arc and Shielded Arc welding. Advanced welding processes. Weldability, Metallurgy of Welding.

Metal cutting: Turning, Methods of Screw production, Drilling, Boring, Milling, Gear Manufacturing, Production of Flat surfaces, Grinding and Finishing processes. Computer controlled manufacturing systems-CNC, DNC, FMS, Automation and Robotics.

Cutting Tool Materials, Tool geometry, Mechanism of Tool Wear, Tool Life and Machinability. Measurement of Cutting Forces. Economics of Machining. Uncoventional Machining processes. Jigs and Fixtures. Fits and Tolerances. Measurement of Surface texture. Comparators Alignment Tests and Reconditioning of Machine Tools.

9. INDUSTRIAL ENGINEERING:

Production planning and Control: Forecasting, Moving Averages, Exponential Smoothing, Operations, Scheduling, Assembly line balancing. Product Development, Break-even analysis, Capacity Planning, PERT and CPM.

Control Operations: Inventory Control, ABC analysis, EOQ model, Material requirement Planning. Job Design, Job standards, Work Measurement, Quality Management, Quality Analysis and Control.

Operations Research: Linear Programming – Graphical and simplex methods. Transport and Assignment Models. Single server Queuing Model.

Value Engineering: Value analysis for Cost value.

10. ELEMENTS OF COMPUTATION:

Computer Organization, Flow charting, Features of Common Computer Languages – FORTRAN, d Base III, Lotus1-2-3,C and Elementary Programming.

STRUCTURAL ENGINEERING

a) Strength of Materials: Simple Stresses and Strains, Elastic Constants, Shear Force and bending moment diagrams for beams, Compund stresses – Principal Planes and Principal stresses - Mohr's circle method, Theory of bending, Distribution of shear stresses, Deflections – Macaulay method of double integration, Theory of torsion, Thin and Thick cylinders, Shear centre, Unsymmetrical bending.

b) Theory of Structures: Direct and bending stresses, Columns & Struts, Strain energy method, Moving loads and influence lines, Arches, Suspension bridges – static and kinematic indeterminacy, Analysis of Continuous beams and portal frames - Moment distribution method, Slope deflection method and Kani's method, Coloumn analogy method and Matrix methods.

c) Concrete Structures: Materials and stresses, Stress blocks, Limit state and working stress methods of design of Beams, Slabs, Columns and Footings. Retaining walls, Water tanks, Slab and T-Beam bridges, Design for Shear and Torsion, Yield line theory.

d) Steel Structures: Riveted and Welded joints and connections, Simple and compound columns, Column bases, Roof trusses, Plate and Gantry girders, Plate girder and Lattice girder railway bridges, Bearings. Plastic analysis and design of beams and frames.

e) Prestressed concrete: Basic concepts, Material losses, System of Prestressing, Analysis and design of beams.

CIVIL ENGINEERING

1. BUILDING MATERIALS:
Timber: Different types and species of structural timber, density – moisture relationship, strength in different directions, defects, preservations, plywood.

Bricks: Types, Indian standard classification, absorption, saturation factor, strength in masonry, influence of mortar strength on masonry strength.

Cement: Compounds of different types, setting times, strength.

Cement mortar: Ingredients, proportions, water demand, mortars for plastering and masonry.
Concrete: Importance of w/c ratio, strength, ingredients including admixtures, workability, testing for strength, mix design methods, non-destructive testing.

2. STRUCTURAL ANALYSIS:
Analysis of determinate structures – different methods. Analysis of indeterminate skeletal frames – Moment distribution, Slope deflection, Kani's, Stiffness and force methods, Energy methods, Muller Breslan principle and application. Plastic analysis of indeterminate beams and simple portal frames – Shape factors.

3. DESIGN OF STEEL STRUCTURES:

Principles of working stress method. Design of connections, Simple members, Built-up sections and Frames, Design of industrial roofs. Principles of ultimate load design. Design of simple members.

4. DESGIN OF CONCRETE AND MASONRY STRUCTURES:

Limit state design for bending, Shear, Axial compression and combined forces. Codal provision for slabs, Beams, Columns and footings. Working stress method of design of R.C. members. Principles of pre-stressed concrete design, Materials, Methods of pre-stressing, losses. Design of simple members and determinate structures. Design of brick masonry as per IS codes.

5. CONSTRUCTION PLANNING AND MANAGEMENT:

Bar chart, Linked bar chart, Work break down structures, Activity – on – arrow diagrams.
Critical path, Probabilistic activity durations, Event based networks. PERT network: Time-cost study, Crashing, Resource allocation.

6. HYDROLOGY AND WATER RESOURCE ENGINEERING:

Hydrological cycle, Precipitation and related data analysis, Unit hydrographs, Evaporation and transpiration. Floods and their management, Stream gauging, Routing of floods, Capacity of reservoirs. Multi purpose uses of water: Soil-plant – Water relationships, Irrigation systems. Water demand assessment: Storages and their yields. Ground water yield and well Hydraulics. Water logging and drainage design. Design of rigid boundary canals, Lacey's and tractive force concepts in canal design, Lining of Canals, Sediment transport in canals, Non-overflow and overflow dams and their design, Energy dissipators, Design of head works, Distribution works, Falls, Cross-drainage works, Outlets, River training.

7. ENVIRONMENTAL ENGINEERING:

a. Water Supplying Engineering: Sources of supply, Yields, Design of intakes and conductors, Estimation of demand. Water quality standards, Control of water borne diseases. Primary and secondary treatment. Conveyance and distribution systems of treated water, Leakages and control. Rural water supply. Institutional and industrial water supply.
b. Waste Water engineering: Urban rain water disposal, Systems of sewage collection and disposal. Design of sewers and sewerage systems, Pumping. Characteristics of sewage and its treatment. Disposal of products of sewage treatment. Plumbing systems. Rural and semi-urban sanitation.
c. Solid Waste Management: Sources and effects of air pollution, Monitoring of air pollution, Noise pollution, Standards, Ecological chain and balance. Environmental assessment.

8. SOIL MECHANICS AND FOUNDATION ENGINEERING:

Properties and classification of soil, Compaction, Permeability and Seepage, Flow nets, Inverted filters, Compressibility and consolidation. Shearing resistance, Stresses and failure. Soil testing in laboratories and in-situ, Earth pressure theories, Stress distribution in soils, Soil exploration, Samplers, Load tests, Penetration tests. Types of foundations, Selection criteria, Bearing capacity, Settlement, Laboratory and field tests, Types of piles and their design and layout. Foundations on expansive soils, Swelling and its prevention, Foundation on swelling soils.

9. SURVEYING AND TRANSPORT ENGINEERING:

Classification of surveys, Scales, Accuracy, Measurement of distances, Direct and indirect methods, Optical and electronic devices, Measurement of directions, Prismatic compass, Local attraction, Theodlytes, Types, Measurement of elevations, Spirit and trigonometric leveling, Contours, Digital elevation modeling concept, Establishment of control by triangulations and traversing, Measurement and adjustment of observations, Computation of coordinates, Field astronomy, Concept of global positioning system, Map preparation by plane tabling and by photogrammetry, Remote sensing concepts, Map substitutes. Planning of Highway systems, Alignment and geometric design, Horizontal and vertical curves, Grade separation, Materials and construction methods for different surfaces and maintenance. Principles of pavement design, Drainage. Traffic surveys, Intersections, Signaling, Mass transit systems, Accessibility, Networking.

PRODUCTION ENGINEERING

UNIT – I

CASTING:

Steps involved in making a casting – Advantage of casting and its applications. – Patterns and Pattern making – Types of patterns – Materials used for patterns, pattern allowances and their construction, Principles of Gating, Gating ratio and design of Gating systems. Solidification of casting – Concept – Solidification of pure metal and alloys, short & long freezing range alloys. Risers – Types function and design, casting design considerations, special casting processes 1) Centrifugal, 2) Die, 3) Investment. Methods of Melting: Crucible melting and cupola operation, steel making processes, special.

UNIT – II

WELDING:

Classification of welding process types of welds and welded joints and their characteristics, design of welded joints, Gas welding, ARC welding, Forge welding, resistance welding, Thermit welding and Plasma (Air and water) welding. Cutting of Metals: Oxy – Acetylene Gas cutting, water plasma. Cutting of ferrous, non-ferrous metals.

UNIT – III

Inert gas welding, TIG & MIG, welding, Friction welding, Induction welding, Explosive welding, Laser welding, Soldering & Brazing. Heat affected zones in welding; welding defects – causes and remedies – destructive non destructive testing of welds.

UNIT – IV

Hot working, cold working, strain hardening, recovery, recrystallisation and grain growth, Comparison of properties of Cold and Hot worked parts, rolling fundamentals – theory of rolling, types of Rolling mills and products. Forces in rolling and power requirements.

UNIT – V

Elementary treatment of metal cutting theory – Element of cutting process – Geometry of single point tool and angles chip formation and types of chips – built up edge and its effects chip breakers. Mechanics of orthogonal cutting – Merchant's Force diagram, cutting forces – cutting speeds, feed, depth of cut, tool life, coolants, machinability – Tool materials. Kinematic schemes of machine tools – Constructional features of speed gear box and feed gear box.

UNIT – VI

Engine lathe – Principle of working, specification of lathe – types of lathe – work holders tool holders – Box tools Taper turning thread turning – for Lathes and attachments. Turret and capstan lathes – collect chucks – other work holders – tool holding devices – box and tool layout. Principal features of automatic lathes – classifications – Single spindle and multi-spindle automatic lathes – tool layout and cam design.

UNIT – VII

Shaping slotting and planning machines – Principles of working – Principal parts – Specification classification, operations performed. Kinematic scheme of the shaping slotting and planning machines, machining time calculations.

UNIT – VIII

Drilling and Boring Machines – Principles of working, specifications, types, operations performed – tool holding devices – twist drill – Boring machines – Fine boring machines – Jig Boring machine. Deep hole drilling machine. Kinematics scheme of the drilling and boring machines.

ANNEXURE-III

LIST OF SCHEDULED CASTES

(Definition 28 of General Rule - 2)
SCHEDULE - I

(Substituted with effect from 27-07-1977 through G.O.Ms.No. 838, G.A.(Services-D) Department, dated 15/12/1977)

1 Adi Andhra
2 Adi Dravida
3 Anamuk
4 Aray Mala
5 **Arundhatiya**
6 Arwa Mala
7 Bariki
8 Bavuri
9 Beda Jangam, Budga Jangam (In Districts of Hyderabad, Rangareddy, Mahaboobnagar, Adilabad, Nizamabad, Medak, Karimnagar, Warangal, Khammam and Nalgonda)*
10 Bindla
11 Byagara, Byagari*
12 Chachati
13 Chalavadi
14 Chamar, Mochi, Muchi, Chamar-Ravidas, Chamar-Rohidas*
15 Chambhar
16 Chandala
17 Dakkal, Dokkalwar
18 Dandasi
19 Dhor
20 Dom, Dombara, Paidi, Pano
21 Ellamalwar, Yellammalawandlu
22 Ghasi, Haddi, Relli, Chachandi
23 Godagali, Godagula(in the Districts of Srikakulam, Vizianagaram & Vishakapatnam) *
24 Godari
25 Gosangi
26 Holeya
27 Holeya Dasari
28 Jaggali
29 Jambuwulu
30 Kolupulvandlu, Pambada, Pambanda, Pambala *
31 Madasi Kuruva, Madari Kuruva
32 Madiga
33 Madiga Dasu, Mashteen
34 Mahar
35 Mala, Mala Ayawaru *
36 Mala Dasari
37 Mala Dasu
38 Mala Hannai
39 Mala Jangam
40 Mala Masti
41 Mala Sale, Netkani
42 Mala Sanyasi
43 Mang
44 Mang Garodi
45 Manne
46 Mashti
47 Matangi
48 Mahter
49 Mitha Ayyalvar
50 Mundala
51 Paky, Moti, Thoti
52 (Omitted)*
53 Pamidi
54 Panchama, Pariah
55 Relli
56 Samagara

57 Samban
58 Sapru
59 Sindhollu, Chindollu
60 Yatala (Srikakulam Dist. Only) Memo No. 8183/CV-1/2006-10 SW (CV-I) Dept., Dt. 31/03/2008
61 Valluvan * (Chittoor and Nellore Dist. Only) Memo No. 8183/CV-1/2006-10 SW (CV-I) Dept., Dt. 31/03/2008

* As for the Constitution (Scheduled Caste) orders (Second Amendment) Act 2002, Act No. 61 of 2002

LIST OF SCHEDULED TRIBES

1. Andh, Sadhu Andh *
2. Bagata
3. Bhil
4. Chanchu (Chenchwar omitted) *
5. Gadabas, Boda Gadaba, Gutob Gadaba, Kallayi Gadaba, Parangi Gadaba, Kathera Gadaba, Kapu Gadaba *
6. Gond, Naikpod, Rajgond, Koitur *
7. Goudu (in the Agency tracts)
8. Hill Reddis
9. Jatapus
10. Kammara
11. Kattunayakan
12. Kolam, Kolawar *
13. Konda Dhoras, Kubi *
14. Konda Kapus
15. Konda Reddis
16. Kondhs, Kodi, Kodhu, Desaya Kondhs, Dongria Kondhs, Kuttiya Konds, Tikiria Khondhs, Yenity Khondhs, Kuvinga *
17. Kotia, Bentho Oriya, Bartika, Dulia, Holva, Sanrona, Sidhopaiko (Dhulia, Paiko, Putiya-omitted *)
18. Koya, Doli Koya, Gutta Koya, Kammara Koya, Musara Koya, Oddi Koya, Pattidi Koya, Rajah, Rasha Koya, Lingadhari Koya (Ordinary), Kottu Koya, Bhine Koya, Raj Koya (Goud-omitted *)
19. Kulia
20. Malis (excluding Adilabad, Hyderabad, Karimnagar, Khammam, Mahabubnagar, Medak, Nalgonda, Nizamabad and Warangal District)
21. Manna Dhora
22. Nayaks (in the Agency tracts)
23. Mukha Dhora, Nooka Dhora
24. Pardhan
25. Porja, Parangi Perja
26. Reddi Dhoras
27. Rona, Rena
28. Savaras, Kapu Savaras, Maliya Savaras, Khutto Savaras
29. Sugalis, Lambadis, Banjara *
30. Thoti (in Adilabad, Hyderabad, Karimnagar, Khammam, Mahabubnagar, Medak, Nalgonda, Nizamabad and Warangal Districts)
31. Valmiki (in the Scheduled Areas of Vishakapatnam, Srikakulam, Vizianagaram, East Godavari and West Godavari Districts *)
32. Yenadis, Chella Yenadi, Kappala Yenadi, Manchi Yenadi, Reddi Yenadi *
33. Yerukulas, Koracha, Dabba Yerukula, Kunchapuri Yerukula, Uppu Yerukula *
34. Nakkala Kurivikaran **(Nakkala – A.P. Gazette, Part – III (B) Central Acts ordinance and Regulations Issue No. 05 Dt. 02/10/2003)**
35. Dhulia, Paiko, Putiya (in the districts of Vishakapatnam, Vizianagaram *)

* As for the Scheduled Castes and Scheduled Tribes Orders (Amendment) Act 2002, Act No. 10 of 2003

LIST OF SOCIALLY AND EDUCATIONALLY BACKWARD CLASSES
(Amended from time to time as on 31/08/2007)

GROUP- A
Aboriginal Tribes, Vimuktha Jathis, Nomadic and Semi Nomadic Tribes etc.,

1. Agnikulakshatriya, Palli, Vadabalija, Besta, jalari, Gangavar, Gangaputra, Goondla, Vanyakulakshatriya (Vannekapu, Vannereddi, Pallikapu, Pallireddy Neyyala and Pattapu) *Mudiraj / Mutrasi / Tenugollu, **The G.O. Ms.No. 15 BCW(C2) Dept., dt. 19/02/2009 is suspended. Hence the inclusion of Mudiraj / Mutrasi / Tenugollu is suspended) vide Hon'ble A.P. High Court orders in WP No. 2122/2009 dated: 29-04-2009.**
2. Balasanthu, Bahurupi
3. Bandara
4. Budabukkala
5. Rajaka (Chakali Vannar)
6. Dasari (formerly engaged in bikshatana)
   (amended vide G.O.Rt.No. 32, BCW(M1) Department, dated 23/02/1995)
7. Dommara
8. **Gangiredlavaru**
9. Jangam (whose traditional occupation is begging)
10. Jogi
11. Katipapala
12. Korcha
13. Lambada or Banjara in Telangana Area
    (deleted and included in S.T. list vide G.O.Ms.No. 149, SW, dated 3/5/1978)
14. Medari or Mahendra
15. Mondivaru, Mondibanda, Banda
16. Nayee Brahmin (Mangali), Mangala and Bajantri
    (amended vide G.O.Ms.No. 1, BCW(M1) Department, dated 6/1/1996)
17. Nakkala **(Deleted vide G.O. Ms. No. 21, BCW(C2) Dept., Dt. 20/06/2011)**
18. Vamsha Raj (amended vide G.O.Ms.No. 27, BCW(M1) Department, dated 23/06/1995 deleting the Original name Pitchiguntla)
19. Pamula
20. Pardhi (**Mirshikari**)
21. Pambala
22. Peddammavandlu, Devaravandlu, Yellammavandlu, Mutyalammavandlu (Dammali, **Dammala**, Dammula, Damala Castes confined to Srikakulam dist. Vide G.O.Ms. No.: 9 BCW(C2) Dept., Dt. 9/04/2008)
23. Veeramushti (Nettikotala), Veera bhadreeya (Amended vide G.O. Ms. No. 62, BCW (M1) Dept., Dt. 10/12/1996)
24. Valmiki boya (Boya, Bedar, Kirataka, Nishadi, Yellapi, Pedda Boya) Talayari and Chunduvallu
    (G.O.Ms. No. 124, SW, Dt. 24.06.85) Yellapi and Yellapu are one and the same amended vide G.O. Ms. No. 61, BCW(M1) Dept., Dt. 05.12.1996)
25. Yerukalas in Telangana area (deleted and included in the list of S.Ts)
26. Gudala
27. Kanjara - Bhatta
28. Kalinga (Kinthala deleted vide G.O.Ms. No. 53, SW, Dt. 07.03.1980)
29. Kepmare or Reddika
30. Mondipatta
31. Nokkar
32. Pariki Muggula
33. Yata
34. Chopemari
35. Kaikadi
36. Joshinandiwalas
37. Odde (**Oddilu**, Vaddi, Vaddelu)
38. Mandula (Govt. Memo No. 40-VI/70-1, Edn., Dt. 10.02.1972)
39. Mehator (Muslim) (Govt. Memo No. 234-VI/72-2, Edn., Dt. 05.07.1972).
40. Kunapuli (Govt. Memo No. 1279/P1/74-10, E&SW, Dt. 03.08.1975)
41. Patra (included in G.O. Ms. No. 8, BCW(C2) Dept., Dt. 28.08.2006)
42. kurakula of Srikakulam, Vizianagaram and Visakhapatnam Districts only. Included vide in G.O.MS.No. 26 BC W (C2) Dept., Dt. 4/07/08
43. Pondara of Srikakulam, Vizianagaram, and Visakhapatnam Districts only. Included vide G.O.MS.No. 28 BC W (C2) Dept., Dt. 4/07/08
44. Samanthula, Samantha, sountia, Sauntia of Srikakulam District only. Included vide G.O.MS.No. 29 BC W (C2) Dept., Dt. 4/07/08

45. pala-Ekari, Ekila, Vyakula, Ekiri, Nayanivaru, Palegaru, Tolagari, Kavali of Chittor, Cuddapah, Kurnool, Anantapur, Nellore, Hyderabad and Rangareddy Districts only. Included Vide G.O. MS. No. 23 B.C. W (C2) Dept., Dt. 4/07/08
46. Rajannala, Rajannalu of Karimnagar, Warangal, Nizamabad and Adilabad Districts only. (included in vide G.O.Ms. No. 44 B.C.W(C2) Dept., Dt.07/08/2008).
47. Bukka Ayyavars, Included vide G.O.Ms.No. 6 Backward Classes Welfare (C2) Dept., dt. 19/02/2009.
48. Gotrala, Included vide G.O.Ms.No. 7 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to Telangana Region only.
49. Kasikapadi / Kasikapudi, Included vide G.O.Ms.No. 8 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to Hyderabad, Rangareddy, Nizamabad, Mahaboobnagar and Adilabad Districts of Telangana Region only.
50. Siddula, Included vide G.O.Ms.No. 9 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to Telangana Region only.
51. Sikligar / Saikalgar, Included vide G.O.Ms.No. 10 Backward Classes Welfare (C2) Dept., dt. 19/02/2009.
52. Poosala included vide G.O. Ms.No. 16 Backward Classes Welfare (C2) Dept., dt. 19/02/2009.
53. **Aasadula / Asadula, included vide G.O. Ms. No. 13, Backward Classes Welfare (C2) Dept., Dt. 27/05/2011. The area of operation shall be confined to East Godavari and West Godavari Districts only.**
54. **Keuta/Kevuto/Keviti, included vide G.O. Ms. No. 15, Backward Classes Welfare (C2) Dept., Dt. 27/05/2011. The area of operation shall be confined to Srikakulam District only.**

GROUP – B (Vocational)

1. Achukatlavandlu in the Districts of Visakhapatnam and Guntur confined to Hindus only as amended vide G.O. Ms. No. 8, BCW(C2) Dept., Dt. 29.03.2000
2. Aryakshatriya, Chittari , Giniyar, Chitrakara, Nakshas (Muchi Telugu Speaking deleted vide G.O. Ms. No. 31, BCW (M1) Dept., 11.06.1996)
3. Devanga
4. Goud (Ediga) Gouda (Gamella) Kalalee, Goundla, Settibalija of Vishaphapatnam, East Godavari, West Godavari and Krishna Districts and Srisayana (Segidi) – (amended vide G.O. Ms. No. 16, BCW (A1) Dept., dt. 19.06.1997
5. Dudekula, Laddaf, Pinjari or Noorbash
6. Gandla, Telikula, Devatilakula (Amended vide G.O. Ms. No. 13, BCW(A1) Dept., dt. 20.05.1997)
7. Jandra
8. Kummara or Kulala, Salivahana (Salivahana added vide G.O. Ms. No. 28, BCW(M1) Dept., 24.06.1995)
9. **Karikalabhakthulu**, Kaikolan or Kaikala (Sengundam or Sengunther)
10. Karnabhakthulu
11. Kuruba or Kuruma
12. Nagavaddilu
13. Neelakanthi
14. Patkar (Khatri)
15. Perika (Perikabalija, **Puragirikshatriya**)
16. Nessi or Kurni
17. Padmasali (Sali, Salivan, Pattusali, Senapathulu, Thogata Sali)
18. Srisayana ((**sagidi**)- deleted and added to Sl.No. 4 of Group-B)
19. Swakulasali
20. Thogata, Thogati or Thogataveerakshtriya
21. Viswabrahmin, Viswakarma (Ausula or Kamsali, Kammari, Kanchari Vadla or Vadra or Vadrangi and Silpis)
    (Viswakarma added vide G.O. Ms. No. 59 BCW(M1) Dept., Dt. 06.12.1995)
22. Kunchiti, Vakkaliga, Vakkaligara, Kunchitiga of Anantapur Dist. Only vide G.O. Ms.No. 10 BCW(C-2) Dept., Dt. 9-04-2008
23. Lodh, Lodhi, Lodha of Hyderabad, Rangareddy, Khammam and Adilabad Districts only. Included in Vide G.O.MS.No. 22 BC W (C2) Dept., Dt. 4/07/08
24. Bondili (included in vide G.O.Ms. No. 42, B.C.W(C2) Dept., Dt.07/08/2008)
25. Are Marathi, Maratha(Non-Brahmins), Arakalies and Surabhi Natakalavallu. (included in vide G.O.Ms. No. 40, B.C.W(C2) Dept., Dt.07/08/2008)
26. Neeli (included in vide G.O.Ms. No. 43, B.C.W(C2) Dept., Dt.07/08/2008).
27. **Bududunjala/Bhunjwa/Bhadbhunja, included vide G.O.Ms. No. 11, Backward Classes Welfare (C2) Dept., Dt. 27/05/2011. The area of operation shall be confined to Hyderabad and Ranga Reddy District only.**

28. Gudia/Gudiya, included vide G.O.Ms. No. 14, Backward Classes Welfare (C2) Dept., Dt. 27/05/2011. The area of operation shall be confined to Srikakulam, Vizianagaram and Vishakhapatnam, district only.

GROUP – C

Scheduled Castes converts to Christianity and their progeny
(Substituted in G.O.Ms.No.159, G.A.(Ser.D) Dept., dt. 02/04/1981)

GROUP – D (Other Classes)

1. Agaru
2. Are-Katika, Katika, Are-Suryavamsi(Are-Suryavamsi added vide G.O. Ms. No. 39, B.C. W(C2) Dept., Dt. 7/08/08)
3. Atagara
4. Bhatraju
5. Chippolu (Mera)
6. Gavara
7. Godaba
8. Hatkar
9. Jakkala
10. Jingar
11. Kandra
12. Kosthi
13. Kachi
14. Surya Balija, (Kalavanthulu) Ganika (amended vide G.O.Ms. No. 20, BCW(P2) Dept., Dt. 19.07.1994)
15. Krishanabalija (Dasari, Bukka)
16. Koppulavelama
17. Mathura
18. Mali (Bare, Barai, Marar and Tamboli of all Districts of Telangana Region added as synonyms vide G.O. Ms. No. 3, BCW(C2) Dept., Dt. 09.01.2004 and G.O. Ms. No. 45, B.C.W(C2) Dept., Dt.07/08/2008)
19. **Mudiraj / Mutrasi / Tenugollu**.
20. Munnurukapu (Telangana)
21. Nagavamsam (Nagavamsa) vide G.O.Ms.No. 53, BC Welfare Dept., dated:19/09/1996
22. Nelli(deleted vide G.O.Ms. No. 43, B.C.W(C2) Dept., Dt.07/08/2008)
23. Polinativelmas of Srikakulam and Visakhapatnam districts
24. . . . deleted vide G.O. Ms.No. 16 Backward Classes Welfare (C2) Dept., dt. 19/02/2009
25. Passi
26. Rangrez or Bhavasarakshtriya
27. Sadhuchetty
28. Satani (Chattadasrivaishnava)
29. Tammali (confined to five districts of Nalgonda, Mahaboobnagar, Karimnagar, Nizamabad and Adilabad of Telangana Region only and not to other parts of A.P. as amended vide G.O. Ms. No. 20, BCW(A1) Dept., dt 21.07.1997)
30. Turupukapus or Gajula kapus {… the words “of Srikakulkam, Vizianagaram and Vishakapatnam Districts” were deleted vide G.O.Ms.No. 62, Backward Classes Welfare (C2) Dept., dt. 20/12/2008 and G.O. Ms.No. 19 Backward Classes Welfare (C2) Dept., dt. 19/02/2009} who are subject to Social customs or divorce and remarriage among their women (G.O. Ms. No. 65, E&SW, dt. 18.02.1994)
31. Uppara or Sagara
32. Vanjara (Vanjari)
33. Yadava (Golla)
34. Are, Arevallu and Arollu of Telangana District (Included vide G.O.Ms.No. 11, Backward Classes Welfare (C-2) Department, dt. 13/5/2003 and G.O.Ms. No. 41, B.C.W(C2) Dept., Dt.07/08/2008)
35. Sadara, Sadaru of Anantapur Dist. Only vide G.O.Ms.No. 11 BCW (C-2) Dept., Dt. 9-04-2008
36. Arava of Srikakulam District only. Included in vide G.O. MS. No. 24 BC W (C2) Dept., Dt. 4/07/08
37. Ayyaraka, of Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari, Krishna, Guntur, Khammam and Warangal Districts only. Included in vide G.O. MS. No. 25 BC W (C2) Dept., Dt. 4/07/08
38. Nagaralu of Srikakulam, Vizianagaram, Visakhapatnam, Krishna, Hyderabad and Rangareddy Districts only. Included in vide G.O. MS. No. 27 BC W (C2) Dept., Dt. 4/07/08

39. Aghamudian, Aghamudiar, Agamudivellalar and Agamudimudaliar including Thuluva Vellalas of Chittoor, Nellore, Kurnool, Anantapur, Hyderabad and Rangareddy Districts only. Included in vide G.O. MS. No. 20 BC W (C2) Dept., Dt. 4/07/08
40. Beri Vysya, Beri Chetty of Chittoor, Nellore and Krishna Districts only. Included in vide G.O. MS. No. 21 BC W (C2) Dept., Dt. 4/07/08
41. Atirasa included vide G.O. Ms.No. 5 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to East Godavari and West Godavari Districts only.
42. Sondi / Sundi included vide G.O. Ms.No. 11 Backward Classes Welfare (C2) Dept., dt. 19/02/2009.
43. Varala included vide G.O. Ms.No. 12 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to Telangana region only.
44. Sistakaranam included vide G.O. Ms.No. 13 Backward Classes Welfare (C2) Dept., dt. 19/02/2009.
45. Lakkamari Kapu included vide G.O. Ms.No. 14 Backward Classes Welfare (C2) Dept., dt. 19/02/2009. The area of operation shall be confined to Telangana region only.
46. Veerashaiva Lingayat/Lingabalija, included vide G.O. Ms.No. 22 Backward Classes Welfare (C2) Dept., dt. 28/02/2009.
47. **Kurmi, included vide G.O.Ms. No. 12, Backward Classes Welfare (C2) Dept., Dt. 27/05/2011. The area of operation shall be confined to Telangana Region and also Krishna District only.**

GROUP – E

(Socially and Educationally Backward Classes of Muslims)

1. Achchukattalavandlu, Singali, Singamvallu, Achchupanivallu, Achchukattuvaru, Achukatlavandlu.
2. Attar Saibuli, Attarollu
3. Dhobi Muslim/ Muslim Dhobi/ Dhobi Musalman, Turka Chakla or Turka Sakala, Turaka Chakali, Tulukka Vannan, Tskalas or Chakalas, Muslim Rajakas.
4. Faqir, Fhakir Budbudki, Ghanti, Fhakir, Ghanta Fhakirlu, Turaka Budbudki, Derves, Fakeer
5. Garadi Muslim, Garadi Saibulu, Pamulavallu, Kani-Kattuvallu, Garadollu, Garadiga.
6. Gosangi Muslim, Phakeer Sayebulu
7. Guddi Eluguvallu, Elugu Bantuvallu, Musalman Keelu **Gurralavallu**
8. Hajam, Nai, Nai Muslim, Navid
9. Labbi, Labbai, Labbon, Labba
10. Pakeerla, Borewale, Deraphakirlu, Bonthala
11. Kureshi/ Khureshi, Khasab, Marati Khasab, Muslim Katika, Khatik Muslim
12. Shaik/ Sheikh
13. Siddi, Yaba, Habshi, Jasi
14. Turaka Kasha, Kakkukotte Zinka Saibulu, chakkitakanevale, Terugadu Gontalavaru, Thirugatiganta, Rollaku Kakku Kottevaru, Pattar Phodulu, Chakketakare, **Thuraka** Kasha
15. Other Muslim groups excluding
    Syed, Saiyed, Sayyad, Mushaik;
    Mughal, Moghal;
    Pathans;
    Irani;
    Arab;
    Bohara, Bohra;
    Shia Imami Ismaili, Khoja;
    Cutchi-Memon;
    Jamayat;
    Navayat;
    and all the synonyms and sub-groups of the excluded groups; and except those who have been already included in the State List of Backward Classes.

N.B.: 1. The above list is for information and subject to confirmation with reference to G.O.Ms.No. 58, SW(J) Department, dated 12/05/1997 and time to time orders.

2. On account of any reason whatsoever in case of any doubt/ dispute arising in the matter of community status (SC/ST/BC/OC) of any candidate, subject to satisfaction with regard to relevant rules and regulations in force the decision of the Commission shall be final in all such cases.