ANDHRA PRADESH PUBLIC SERVICE COMMISSION: VIJAYAWADA

NOTIFICATION NO.23/2018, Dt.31/12/2018

LECTURERS IN GOVERNMENT POLYTECHNIC COLLEGES (ENGINEERING AND NON ENGINEERING) IN A.P. TECHNICAL EDUCATION SERVICE (GENERAL RECRUITMENT)

PARA – 1:

1.1. Applications are invited online for recruitment to the post of Lecturers in Government Polytechnic Colleges (Engineering and Non-Engineering) in A.P Technical Education Service for a total of 95 CF and 310 Fresh Vacancies with basic pay of Rs. 15,600 – 39,100 with AGP Rs. 5,400 (AICTE 2006 Pay Scales) from candidates within the age group of 18 - 42 years as on 01.07.2018.

1.2. The proforma Application will be available on Commission's Website *(https://psc.ap.gov.in) from* ***06/02/2019 to 27/02/2019 (Note:26/02/2019*** is the last date for payment of fee up to 11:59 mid night).

1.3. Before applying for the post, an applicant shall register his/her bio-data particulars through One Time Profile Registration *(OTPR)* on the Commission's Website viz., https://psc.ap.gov.in. Once applicant registers his/her particulars, a user ID is generated and sent to his/her registered mobile number and email ID. Applicants need to apply for the post using the OTPR user ID through Commission's website.

1.4. The Commission conducts Screening Test in offline mode in case subject wise applicants exceed 25,000 in number and Main Examination in online mode for candidates selected in screening test.

1.5. If the screening test is to be held, the date of screening test will be communicated through Commission's Website.

1.6. Tentatively the main examination in online mode for candidates selected in screening test will be held through computer based test in the **month of July 2019.** The candidates are required to visit the Commission's website regularly to keep himself / herself updated about confirmed dates of examination to be held. There would be objective type questions which are to be answered on computer system. Instructions regarding computer based recruitment test are attached as **Annexure - III.** In case any paper of the Examination is held in different languages, the candidate has to choose the medium in which he/she wants to write the examination and the paper will be valued with reference to that medium only.

1.7. A general Mock Test facility is available to the applicants to acquaint themselves with the computer based recruitment test. Applicant can visit the website and practice the answering pattern under MOCK TEST option available on main page of *website* https://psc.ap.gov.in.

1.8. The applicant is required to visit the Commission's website regularly to keep himself / herself updated until completion of the recruitment process. The Commission's website information is final for all correspondence. No individual correspondence by any means will be entertained under any circumstances.

1.9. HALL TICKETS can be downloaded whenever the Commission uploads them to its website. Intimation would be given through the website regarding downloading of Hall Tickets.

1.10. All desirous and eligible candidates shall apply online after satisfying themselves that they are eligible as per the terms and conditions of this recruitment notification. Any application sent through any mode other than the prescribed online mode will not be entertained under any circumstances. Submission of application form by the candidate is authentication that he / she has read the notification and shall abide by the terms and conditions laid down there under.

1.11. The details of vacancies are as follows:-

I. CARRIED FORWARD (CF) VACANCIES

Post Code	Name of the Department	Zone wise vacancies				Total
		I	II	III	IV	
01	Lecturer in Architectural Engineering	-	01	-	-	01
02	Lecturer in Auto Mobile Engineering	-	04	03	07	14
03	Lecturer in Bio Medical Engineering	-	-	-	04	04
04	Lecturer in Commercial & Computer Practice	-	01	03	02	06

05	Lecturer in Ceramic Technology	-	-	01	-	01
06	Lecturer in Chemical Engineering	-	-	-	-	-
07	Lecturer in Chemistry	01	-	-	-	01
08	Lecturer in Civil Engineering	02	07	07	12	28
09	Lecturer in Computer Engineering	01	-	-	-	01
10	Lecturer in Electronics & Communication Engineering	-	-	01	02	03
11	Lecturer in Electrical & Electronics Engineering	02	03	-	01	06
12	Lecturer in Electronics & Instrumentation Engineering	-	-	01	01	02
13	Lecturer in English	02	01	-	01	04
14	Lecturer in Garment Technology	-	-	01	-	01
15	Lecturer in Geology	-	-	01	-	01
16	Lecturer in Marine Engineering	-	-	-	-	-
17	Lecturer in Mathematics	01	-	-	01	02
18	Lecturer in Mechanical Engineering	03	03	01	03	10
19	Lecturer in Metallurgical Engineering	-	-	-	-	-
20	Lecturer in Mining Engineering	04	-	01	-	05
21	Lecturer in Pharmacy	-	-	-	-	-
22	Lecturer in Physics	01	-	-	01	02
23	Lecturer in Textile Technology	-	-	01	02	03
Total		**17**	**20**	**21**	**37**	**95**

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated: 18.03.1996 the Carry Forward Vacancies to be filled first by a relevant community candidate in succeeding recruitment.

II. FRESH VACANCIES

Post Code	Name of the Department	Zone wise vacancies				Total
		I	II	III	IV	
01	Lecturer in Architectural Engineering	**-**	**-**	**-**	**-**	-
02	Lecturer in Auto Mobile Engineering	-	02	05	05	12
03	Lecturer in Bio Medical Engineering	-	-	-	02	02
04	Lecturer in Commercial & Computer Practice	02	01	05	-	08
05	Lecturer in Ceramic Technology	-	-	01	-	01
06	Lecturer in Chemical Engineering	05	-	-	-	05
07	Lecturer in Chemistry	02	01	08	09	20
08	Lecturer in Civil Engineering	04	10	11	18	43
09	Lecturer in Computer Engineering	02	02	02	08	14
10	Lecturer in Electronics & Communication Engineering	02	07	05	20	34
11	Lecturer in Electrical & Electronics Engineering	06	03	07	26	42
12	Lecturer in Electronics & Instrumentation Engineering	-	-	01	-	01
13	Lecturer in English	01	02	01	08	12
14	Lecturer in Garment Technology	-	-	-	-	-
15	Lecturer in Geology	-	-	-	-	-
16	Lecturer in Marine Engineering	03	03	-	-	06
17	Lecturer in Mathematics	01	01	03	09	14
18	Lecturer in Mechanical Engineering	13	09	06	24	52
19	Lecturer in Metallurgical Engineering	05	01	-	-	06
20	Lecturer in Mining Engineering	-	-	01	-	01
21	Lecturer in Pharmacy	05	03	-	12	20

22	Lecturer in Physics	02	01	05	09	17
23	Lecturer in Textile Technology	-	-	-	-	-
Total		**53**	**46**	**61**	**150**	**310**

Note: The details of vacancies viz., Community, Zone and Gender wise (General / Women) may be seen at Annexure-I

PARA-2: ELIGIBILITY:

i. He / She is of sound health, active habits and free from any bodily defect or infirmity rendering him unfit for such service:,

ii. His / Her character and antecedents are such as to qualify him for such service:,

iii. He /She possesses the academic and other qualifications prescribed for the post: and

iv. He/ She is a citizen of India:
Provided that no candidate other than a citizen of India may be appointed except with the previous sanction of the State Government and except in accordance with such conditions and restrictions as they may be laid down. Such sanction shall be not be accorded unless the State Government are satisfied that sufficient number of citizens of India, who are qualified and suitable are not available.

PARA-3: EDUCATIONAL QUALIFICATIONS:

A candidate should possess the academic qualifications and experience including practical experience prescribed, if any, for the post on the date of the notification for direct recruitment issued by the concerned recruiting agency.

Post Code	Name of the Post	Educational Qualification
01	Lecturer in Architectural Engineering	1st Class Bachelor's Degree in appropriate branch or Engineering / Technology.
02	Lecturer in Automobile Engineering	
03	Lecturer in Bio Medical Engineering	
05	Lecturer in Ceramic Technology	
06	Lecturer in Chemical Engineering	
08	Lecturer in Civil Engineering	
09	Lecturer in Computer Engineering	
10	Lecturer in Electronics & Communication Engineering	
11	Lecturer in Electrical & Electronics Engineering	
12	Lecturer in Electronics & Instrumentation Engineering	
16	Lecturer in Marine Engineering	
18	Lecturer in Mechanical Engineering	
19	Lecturer in Metallurgical Engineering	
20	Lecturer in Mining Engineering	
23	Lecturer in Textile Technology	
14	Lecturer in Garment Technology	Must possess First Class Bachelor's Degree in Textile Technology or First Class Master's Degree in Home Science with Clothing and Textile as subjects from an University in India recognized by UGC/ AICTE.

17	Lecturer in Mathematics	1st Class Post Graduate Degree in appropriate subject.
22	Lecturer in Physics	
07	Lecturer in Chemistry	
13	Lecturer in English	
15	Lecturer in Geology	
21	Lecturer in Pharmacy	First class Bachelor's Degree in Pharmacy.
04	Lecturer in Commercial & Computer Practice (to teach Commerce, Typewriting and Shorthand subjects)	i) Must possess 1st Class Master Degree in Commerce. ii) Type writing Higher Grade in English and Shorthand Higher Grade in English conducted by State Board of Technical Education and Training.

Note *: i)*In case of recruitment of candidates belonging to SC/ST for the posts of Lecturers in Engineering & Non-Engineering, a relaxation of 5% marks shall be accorded and candidate having 55% marks and above in appropriate Branch of study shall be eligible for appointment to the post of Lecturer in Engineering & Non-Engineering.

ii) Please see **Annexure- V** for subject equivalency particulars

PARA- 4 RESERVATIONS:

4.1. There will be reservations in direct recruitment in respect of Scheduled Tribes, Scheduled Castes, Backward Classes, Women and Meritorious Sports Person as per Rule 22 and 22 (A) of A.P. State and Subordinate Service Rules as per the Departmental Special Rules. (G.O.Ms.No.178 Higher Education (TE-I) department, Dt. 09/12/2005).

4.2 Reservation to Disabled persons is not applicable as per the Departmental Special Rules. (G.O.Ms.No.178 Higher Education (TE-I) department, Dt. 09/12/2005).

4.3. In the case of candidates who claim the benefit of reservation or relaxation from upper age limit on the basis of Schedule Caste/Tribe or Community the basic document of proof of Community will be the Certificate issued by the Revenue Authorities not below the rank of Tahsildar in the case of SC/ST and Non Creamy Layer Certificate issued by the Revenue Authorities in the case of Backward Classes. The list of Caste/Tribe/Community is as incorporated in Schedule-I of above Rules. The list is also appended at Annexure –IV. The candidates have to produce proof of the community claimed in their application at all stages of selection along with the certificates relating to Educational Qualifications and local status certificates etc.,. Subsequent claim of change of community will not be entertained.

4.3. The meritorious sportsman means a sportsman who has represented the State or the Country in a national or international competition or Universities in the Inter-University tournaments conducted by the Inter-University Boards or the State School team in the national sports/games for schools conducted by the All India School Games Federation in any of the games, sports, mentioned below; and any other games/sports as may be specified by the Government from time to time, in terms of Rule 2 (19) of AP State and Subordinate Service Rules.

4.4. 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 A.P. 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.

4.5. There shall be Reservation to Women horizontally to an extent of 33 1/3% as per G.O. Ms. No. 63, GA (Ser-D) Dept., dated:17.04.2018.

4.6 The reservation to meritorious sports persons will apply as per G.O.Ms.No.13, GA (Ser-D) Dept., dated:23.01.2018, and G.O.Ms.No.74, Youth, Advancement, Tourism and Culture (Sports) Dept., dated:09.08.2012 and G.O.Ms.No.473, Youth, Advancement, Tourism and Culture (Sports) Dept., dated: 03.12.2018.

4.7. Reservation to BC-E group will be subject to the adjudication of the litigation before the Hon'ble Courts including final orders in Civil Appeal No: (a) 2628-2637 of 2010 in SLP. No. 7388-7397 of 2010, dated. 25/03/2010 and orders from the Government.

4.8. The candidates claiming to be belonging to non-creamy layer of Backward Class have to obtain a Certificate in terms of G.O. Ms. No. 3, Backward Classes Welfare (C-2) Department, Dated 04.04.2006 read with G.O. Ms. No. 26 Backward Classes Welfare(C) Department, Dated 09.12.2013 regarding their exclusion from the Creamy Layer from the competent authority (Tahasildar) and produce the same at appropriate time of verification. In case of failure to produce the same on the day of verification, the Candidature will be considered against open competition even if he / she is otherwise eligible in all aspects.

PARA - 5: RESERVATION TO LOCAL CANDIDATES:

5.1. The specification of a post is determined by the concerned Department with reference to both vertical and horizontal reservations as well as local reservation. The reservations are specified through the indent by the concerned department and the general criteria with regard to reservations are given below.

5.2. Reservation to the Local candidates is applicable as provided in Article 371-D as per G.O.Ms.No.674, G.A (SPF- A) Department, dated.20.10.1975 and rules as amended from time to time and as in force on the date of notification. The candidates claiming reservation as Local candidates should obtain the required Study Certificate(s) (from IV Class to X Class or SSC) OR Residence Certificate in the proforma prescribed for those candidates who have not studied in any Educational Institutions as the case may be. The relevant certificates with authorized signature shall be produced as and when required.

PARA -6 DEFINITION OF LOCAL CANDIDATE:

6.1. A local candidate has been defined in G.O.Ms.No.674, General Administration (SPF-A) Department, dated:20.10.1975 "LOCAL CANDIDATE" as follows:

"Local Candidate:- (1) A candidate for direct recruitment to any post shall be regarded as a local candidate in relation to a local area.

(a) in cases where a minimum educational qualification has been prescribed for recruitment to the post.

(i) "if he has studied in an educational institution or educational institutions in such local area for a period of not less than four consecutive academic years ending with the academic year in which he appeared or, as the case may be, first appeared for the relevant qualifying examination; or

(ii) where during the whole or any part of the four consecutive academic years ending with the academic year in which he appeared or as the case may be, first appeared for the relevant qualifying examination he has not studied in any educational institution, if he has resided in that local area for a period of not less than four years immediately preceding the date of commencement of the qualifying examination in which he appeared or as the case may be, first appeared.

(b) In cases where no minimum educational qualification has been prescribed for recruitment to the post, if he has resided in that local area for a period of not less than four years immediately preceding the date on which the post is notified for recruitment.

Explanations:- For the purpose of the paragraph.

(i) educational institution means a University or any educational institution recognized by the State Government, a University or other competent authority;

(ii) relevant qualifying examination in relation to a post means;

(a) the examination, a pass in which is the minimum educational qualification prescribed for the post;

(b) the Matriculation examination or an examination declared by the State Government to be equivalent to the Matriculation examination;

whichever is lower; and

(iii) In reckoning the consecutive academic years during which a candidate has studied, any period of interruption of his study by reason of his failure to pass any examination shall be disregarded.

(iv) the question whether any candidate for direct recruitment to any post has resided in any local area shall be determined with reference to the places where the candidate

actually resided and not with reference to the residence of his parents or other guardian (Vide G.O.Ms.No.168, G.A. (SPF.A) Department, dated.10-3-77).

(2) A candidate for direct recruitment to any post who is not regarded as a local candidate under sub paragraph (1) in relation to any local area shall.

(a) in cases where a minimum educational qualification has been prescribed for recruitment to the post.

(i) if he has studied in educational institutions in the State for a period of not less than seven consecutive academic years ending with academic year in which he appeared or as the case may be, first appeared for the relevant qualifying examination, be regarded as a local candidate in relation to

(1) Such local area where he has studied for the maximum period out of the said period of seven years; or

(2) where the periods of his study in two or more local areas are equal, such local areas where he has studied last in such equal periods;

(ii) if during the whole or any part of the seven consecutive academic years ending with the academic years in which he appeared or as the case may be first appeared for the relevant qualifying examination, he has not studied in the educational institutions in any local area, but has resided in the State during the whole of the said period of seven years, be regarded as a local candidate in relation to

(1) such local area where he has resided for a maximum period out of the said period of seven years: or

(2) where the periods of his residence in two or more local areas are equal, such local areas where he has resided last in such equal periods;

(b) In cases where no minimum educational qualification has been prescribed for recruitment to the post, if he has resided in the State for a period of not less than seven years immediately preceding the date on which the post is notified for recruitment, be regarded as a local candidate in relation to

(i) such local area where he has resided for the maximum period out of the said period of seven years; or

(ii) where the periods of his residence is two or more local areas are equal such local area where he has resided last in such equal periods " .

(G.O.Ms.No.168, dated 10-3-1977).

6.2. Single certificate, whether of study or residence as stipulated in G.O.Ms.No.674, General Administration (SPF-A) Dept., dated:20.10.1975 would suffice for enabling the candidate to apply as a "LOCAL CANDIDATE".

6.3. Residence certificate will not be accepted, if a candidate has studied in any Educational Institution upto S.S.C. or equivalent examination. Such candidates have to produce study certificates invariably. The candidates, who acquired degree from open Universities directly without studying in any Educational Institution, only may submit residence certificate. Here Educational Institutions mean a recognized Institution by the Government / University/Competent authority.

6.4. Candidates are advised to refer provisions of the PRESIDENTIAL ORDER 1975 in this regard.

6.5. Candidates who migrate from Telangana to Andhra Pradesh between 2nd June, 2014 and 1st June, 2019 (in this case till date of notification) as per terms laid down in circular memo no.4136/SPF & MC/2015-5, Dated.20.11.2017 of Government of Andhra Pradesh shall obtain the Local Status Certificate and produce at the time of verification.

6.6. The composition of Districts in each zone is as hereunder:

Zone-I: Srikakulam, Vizianagaram and Visakhapatnam. (SKM, VZM,VSP,)
Zone-II: East Godavari, West Godavari and Krishna. (EG, WG, KST)
Zone-III: Guntur, Prakasam and Nellore. (GNT, PKM, NLR)
Zone-IV: Chittoor, Kadapa, Anantapur and Kurnool. (CTR, CDP, ATP, KNL)

PARA- 7 AGE:

7.1. No person shall be eligible for direct recruitment if he/she is less than 18 years of age and if he / she is more than 42 years of age as on 01/07/2018 as per G.O.Ms.No.132,GA (Ser-A) Dept., dated:15.10.2018. Candidates should not be born earlier than 2nd July 1976 and not later than 1st July 2000.

7.2. *Age Relaxation* is applicable to the categories as detailed below:

S. No.	Category of candidates	Relaxation of age permissible
1.	SC/ST and BCs	5 Years
2.	Ex-Service men	Shall be allowed to deduct from his age a period of 3 years in addition to the length of service rendered by him in the armed forces / NCC.
3.	N.C.C. (who have worked as Instructor in N.C.C.)	
4.	A.P. State Government Employees (Employees of APSEB, APSRTC, Corporations, Municipalities etc. are not eligible).	Up to maximum 5 Years based on the length of regular service.
5.	Retrenched temporary employees in the State Census Department with a minimum service of 6 months.	3 Years

EXPLANATION:

Provided that the persons referred to at Sl.Nos.2 & 3 above shall, after making the deductions referred to in sub Rule 12 (c) (i) & (ii) of A.P. State and Subordinate Service Rules not exceed the Maximum age limit prescribed for the post.

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

PARA - 8 HOW TO APPLY:

STEP-I: Candidates applying for the first time for any notification has to first fill the OTPR application carefully to obtain OTPR ID. While filling the OTPR, the candidate has to ensure that the particulars are filled correctly. The Commission bears no responsibility for the mistakes, if any, made by the candidates. If candidates choose to modify they may do so by clicking the modify OTPR make the modification, save them and proceed to STEP-II (If candidates have already registered and have the OTPR ID, number then he/she can proceed to STEP-II.)

STEP-II: The Applicant has to Login in the Commission's website with the User Name (OTPR ID) and the Password set by Candidate. After Login, the Applicant has to click on the "Online Application Submission" present in the bottom right corner of the Commission's website.

PAYMENT PROCESS: The Applicant now has to click on the payment link against the Notification Number that he wants to apply. The Basic details required for calculation of the Fee and Age relaxation will be prepopulated from the OTPR data. The Applicant has to verify all the details that are displayed. Once the Payment form is submitted, the respective details (Used for Calculation of fee and Age relaxation) will not be altered in any stage of application processing. Hence if any details are to be changed, applicant should use the Modify OTPR link, modify the details, save it and again click on application payment link.

STEP-III: After checking all the data and ensuring that the data is correct the applicant has to fill application specific data such as Local/Non Local status, White card details etc., which are also used to calculate the Fee. Once all the data is filled appropriately, the applicant has to submit the payment form. On successful submission, the payment reference ID is generated and is displayed on the screen. By clicking "OK" the Applicant is shown the various payment options where he/she can select any one among them and complete the payment process as given on the screen.

STEP-IV: Once the payment is successful, payment reference ID is generated. Candidates can note the payment reference ID for future correspondence. Thereafter the applicant is directed to the application form. Applicant should provide the payment reference Id generated along with the other details required for filing the application form (other fields like OTPR ID and fees relaxations details will be prepopulated from the data submitted in the payment form for respective notification). The applicant should check the data displayed thoroughly and should fill the application specific fields like qualification details, examination centre etc., carefully and submit the application form.

Once the Application is submitted successfully then Application Receipt is generated. The Applicant is requested to print and save the application receipt for future reference/correspondence.

NOTE: Applicant shall note that the data displayed from OTPR at the time of submitting the application will be considered for the purpose of this notification only. Any changes made by the applicant to OTPR data at a later date shall not be considered for the notification on hand.

STEP-V: In any case if the payment process is not submitted successfully, then the applicant should start the fresh payment process as mentioned in STEP-II.

STEP-VI: Once the application is submitted successfully, correction in application form will be enabled. The corrections can be made in the application form itself. Fields which affects the Name, fee and age relaxations are not enabled for corrections.

NOTE:

A. The Commission is not responsible, for any omissions by the applicant in bio-data particulars while submitting the application form online. The applicants are therefore, advised to strictly follow the instructions given in the user guide before submitting the application.

B. All the candidates are requested to submit their application with correct data. It is noticed that some of the candidates are requesting for change in the data, after submission of the application. It is informed that such requests shall be allowed on payment of Rs.100/- (Rupees Hundred Only) for each correction. However changes are not allowed for name, fee and age relaxation. No manual application for corrections shall be entertained. Corrections in the applications will be enabled after the last date of the submission of applications and will be allowed up to 7 days only, from the last date of applications.

C. The particulars furnished by the applicant in the Application Form will be taken as final. Candidates should, therefore, be very careful in Uploading / Submitting the Application Form online.

D. 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 to the final stage of recruitment process or even at a later stage and also liable for punishment as per Para 16.1 of this notification.

E. 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.

PARA - 9: (a) FEE:

9.1. Applicant must pay Rs. 250/- (Rupees two hundred and fifty only) towards application processing fee and Rs 120/- (Rupees one hundred twenty only) towards examination fee.

9.2. However, the following categories of candidates are exempted from payment of examination fee Rs.120/- only.

i) SC, ST, BC & Ex-Service Men.

ii) Families having Household Supply White Card issued by Civil Supplies Department, A.P. Government. (Residents of Andhra Pradesh)

iii) Un-employed youth 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.

iv) 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.

v) Candidates belonging to other States shall pay the prescribed examination fee of Rs.120/-(Rupees one hundred and twenty only), along with processing fee of Rs. 250/- (Rupees two hundred and fifty only) through different channels as indicated at Para-8. Otherwise such applications will not be considered and no correspondence on this will be entertained.

9.3. b) MODE OF PAYMENT OF FEE:

i) The Fee mentioned in the above paragraph is to be paid online using Payment Gateway using Net Banking/ Credit card / Debit Card. The list of Banks providing service for the purpose of online remittance of Fee will be available on the Website.

ii) The fee once remitted shall not be refunded or adjusted under any circumstances. Failure to pay the examination fee and application fee (in non-exempt case) will entail total rejection of application.

iii) IPOs / Demand Drafts are not accepted.

iv) In case of corrections Rs.100/- per correction will be charged. However changes are not allowed for name, fee and age relaxation.

PARA-10: SCHEME OF EXAMINATION:-

The Scheme & Syllabus for the examination has been shown in Annexure-II.

PARA - 11: CENTRES FOR ON–LINE EXAMINATIONS:

The applicant may choose the Test centre with three preferences. However the Commission reserves the right to allot the applicant to any centre of examination depending on the availability of the resources like centres / systems.

PARA – 12: RESOLUTION OF DISPUTES RELATED TO QUESTION PAPER, ANSWER KEY AND OTHER MATTERS

12.1. The Commission would publish the key on its website after conduct of the examination. Any objections with regard to the key and any other matter shall be filed within one week after publication of the key in the prescribed proforma available in the website.

12.2. The objections received in the prescribed proforma and within due date will be referred to expert Committee for opinion and to take appropriate decision thereon by the Commission. As per decision of the Commission a revised key will be hosted and further objections only in respect of keys that are revised would be called for a period of three working days from the date of publication of revised key. No further objections on original key will be entertained at this stage. The matter will again be referred to experts, taking into consideration the opinion of expert Committee and the final key would be hosted on website based on the decision of the Commission.

12.3. The objections if any would be examined and the decision of the Commission in this regard shall be final. Any objection filed after expiry of specified time from the date of publication of key / revised key would not be entertained.

PARA -13 NOTE ON IMPORTANT LEGAL PROVISIONS GOVERNING THE RECRUITMENT PROCESS:

13.1. 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, G.O.Ms.No.544, General Administration (Ser. A) Department, Dated:04.12.1998 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.

13.2. The recruitment will be processed as per this notification and as per the Rules and Instructions issued by the Government and also as decided by the Commission from time to time. As per G.O.Ms.No.178 Higher Education (TE-I) department, Dt. 09/12/2005 and Special Rules / Adhoc Rules Governing the recruitment and other related GOs, Rules etc., are applicable.

13.3. Rules: The various conditions and criteria prescribed herein are governed by the 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 as in force.

13.4. 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 secrecy and confidentiality so as to ensure that the principle of merit is scrupulously followed.

13.5. Zonal/Local: In terms of Para 4 of the G.O., A.P. Public Employment (Organization of Local Cadres and Regulation of Direct Recruitment) Order, 1975 (G.O.Ms.No.674, G.A. (SPF-A) Dept., dated: 20/10/1975) read with G.O.Ms.No.124, General Administration (SPF-A) Department, dated: 07/03/2002, "The provisional list shall be divided into two parts. The first part shall comprise 30% of the posts consisting of combined merit lists of locals as well as non-locals and the remaining second part shall comprise the balance 70% of the posts consisting of locals only and the posts shall be filled duly following the rule of reservation".

13.6. Scheme is prescribed as per G.O Ms. No.141, Finance (HR-I Plg, & Policy) Dept., dated: 01.08.2016.

13.7. 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, to their Head of Office/ Department that they have applied for this recruitment.

13.8. 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.

13.9. The Candidates who have obtained Degrees through Open Universities / Distance Education mode are required to have recognition by the Distance Education Council, Government of India. Unless such Degrees have been recognised by the D.E.C. they will not be accepted for purpose of Educational Qualification. The onus, in case of doubt, of Proof of recognition by the D.E.C. that their Degrees / Universities have been recognised, rests with the candidate. Candidates may also refer G.O.R.T.No.143, Higher Education (EC) Dept., Dated:11.07.2018 and the Supreme Court judgment dated:03.11.2017 in this connection.

PARA- 14 Please read the following Annexures appended to the notification before filling the application form

Annexure- I- Break up of vacancies
Annexure- II- Scheme & Syllabus
Annexure- III- Instructions to candidates
Annexure- IV- LIST OF SC / ST /BC's
Annexure- V – Subject equivalency particulars

PARA-15: PROCEDURE OF SELECTION:

15.1 The selection of candidates for appointment to the posts shall be based on the merit in the computer based examination followed by oral test (Interview), to be held as per the scheme of examination enunciated at para 10 above.

15.2. Appearance in all the papers of computer based examination / Main examination is compulsory. Absence in any of the papers will automatically render the disqualification of the candidature.

15.3. As per G.O.Ms.No.5 General Administration (Ser-A) Dept., dated:05.01.2018 "Government here by permit the Andhra Pradesh Public Service Commission to pick up candidates who obtains such minimum qualifying marks in Screening Test / Preliminary Examination as may be fixed by the Commission at its discretion shall be admitted to the Main Examination in all direct recruitment examinations. The APPSC is further permitted to select candidates belonging to the Scheduled Caste or Scheduled Tribes or Backward classes or Physically Challenged candidates for Main Examination by applying relaxed standards in the Screening Test / Preliminary Examination, if the Commission is of the opinion that sufficient number of candidates from these communities are not likely to be eligible for main examination on the basis of general standard in Screening Test / Preliminary Examination in order to fill up the vacancies reserved for them". Candidates who will come up for selection due to relaxed standards shall be considered against reserved category only.

15.4. The minimum qualifying marks for consideration of a candidate to the selection process are 40% for OCs, 35% for BCs, and 30% for SCs, STs and PHs or as per rules. In the event of Schedule Caste & Schedule Tribe candidates not coming up for selection with the existing minimum prescribed for selection in the competitive examination conducted by the APPSC their selection shall be considered on the basis of rank with reference to their performance in the written and / or oral competitive examination irrespective of the marks secured.

N.B.: Mere securing of minimum qualifying marks does not confer any right to the candidate for being considered to the selection.

15.5. Where the candidates get equal number of marks in the main examination if two or more candidates get equal total number of marks, those candidates shall be bracketed. Candidates within the same bracket shall then be ranked 1, 2, 3 etc., according to age

i.e., oldest being considered for admission. In case there is tie in age, the person who possesses educational qualification at earlier date would be considered.

15.6. With regard to situation where there is deletion of questions, if any, from any paper, scaling (proportionate increase) would be done for that particulars part of the paper to the maximum marks prescribed for the paper and the marks would be rounded off to 2 decimals to determine the merit of the candidate.

15.7. While the Commission calls for preference of candidates in respect of posts, zones 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 under Article 315 and 320 of the Constitution of India. Therefore, the Commission has the power to assign a candidate to any of the notified posts for which he is considered to be qualified and eligible, subject to fulfilling the selection criterion. Mere claim of preference for any Zone for allotment against vacancy does not confer a right to selection for that Zone in particular or any Zone in general.

15.8. 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 and free from any bodily defect or infirmity.

15.9. ANSWER KEY AND MARKS: Answer key would be published on the website and marks of each candidate are also displayed on website. No separate memorandum of marks would be issued.

PARA-16: DEBARMENT:

16.1. 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 UPTO FIVE YEARS FROM APPEARING FOR ANY OF THE EXAMINATIONS CONDUCTED BY THE COMMISSION, and summary rejection of their candidature for this recruitment.

16.2. 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. Further candidates shall be liable for penalty as per G.O.Ms.No.385,G.A.(Ser. A) Dept., Dt.18/10/2016. The Chief Superintendent of the examination centre is authorized to take decision in case of malpractice or usage of unfair means or creation of disturbance or use of physical force by any candidate and report the matter to the competent authority as well as register a police case.

16.3. 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.

16.4. Any candidate 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, be liable to be debarred permanently from any exam or selection held by the Service Commissions in the country.

16.5. ELECTRONIC GADGETS BANNED:

(a) The use of any mobile (even in switched off mode), pager, scientific calculator or any electronic equipment or programmable device or storage media like pen drive, smart watches etc., or camera or blue tooth devices or any other equipment or related accessories either in working or switched off mode capable of being used as a communication device during the examination is strictly prohibited. Any infringement of these instructions shall entail disciplinary action including ban from future examinations.
(b) Candidates are advised in their own interest not to bring any of the banned items including mobile phones/ pagers to the venue of the examination, as arrangement for safe – keeping cannot be assured.

PARA-17: 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 the terms 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.

Place: VIJAYAWADA **Sd/-A.K.Maurya,IFS.,**
Date: 31.12.2018 **SECRETARY**

ANNEXURE-I

NOTIFICATION NO. 23/2018

BREAKUP OF VACANCIES FOR THE POST OF LECTURER IN GOVERNMENT POYTECHNIC

Note: 1. As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated: 18.03.1996 the Carry Forward vacancies to be filled first by a relevant community candidate in succeeding recruitment.

2. Reservation to meritorious sports persons will apply as per G.O.Ms.No.13 GA (Ser-D) Dept., dated:23.01.2018 and G.O.Ms.No.74 youth advancement tourism and culture (sports) Dept and G.O.Ms.No.473, youth, advancement, Tourism and Culture (Sports) Dept., dated: 03.12.2018.

CARRIED FORWARD (CF) VACANCIES

POST CODE -01: ARCHITECTURE ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	1	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1

Note As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 01* CF Vacancy, interchanging procedure would be followed.

POST CODE -02: AUTO MOBILE ENGINEERING

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	2	-	2	-	3	5
BC-A	-	-	-	-	-	1*	-	-	-	-	-	1*	-	-	-	1*	-	1	-	2	3
BC-B	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	-	-	-	2	2
BC-C	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	1*	-	-	1	1	-	2
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	1	1	2	-	2	-	1	-	2	1	4	-	5	2	7	14

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 07* CF Vacancies, interchanging procedure would be followed.

POST CODE -03: BIO MEDICAL ENGINEERING

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1	-	-	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1	1
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	4

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

POST CODE -04: COMMERCIAL & COMPUTER PRACTICE.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	1	1	2
BC-A	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1*	-	-	-	2	2
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	1*	-	1*	-	-	-	1	-	1	2
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	1	-	-	-	-	3	-	1	-	1	-	1	1	4	6

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 04* CF Vacancies, interchanging procedure would be followed.

POST CODE -05: CERAMIC TECHNOLOGY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 01* CF Vacancy, interchanging procedure would be followed.

POST CODE -07: CHEMISTRY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1

POST CODE -08: CIVIL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	3	-	1	-	3	-	-	-	3	-	1	-	9	-	10
BC-A	-	-	1	-	-	-	1	-	-	-	-	-	1	-	1	-	1	-	3	-	4
BC-B	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	1	-	2
BC-C	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-D	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	1*	-	1	2	1	4
BC-E	-	-	-	1	-	-	-	-	-	-	1	1*	-	-	-	-	-	-	1	2	3
SC	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	2	-	2
ST	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1*	1	-	-	1	2
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	1	-	1	6	-	1	-	5	1	2	1	7	2	3	2	19	4	28

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 04* CF Vacancies, interchanging procedure would be followed.

POST CODE -09: COMPUTER ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated:18.03.1996 the carry forward vacancies to be filled first by a Relevant community candidate in succeeding recruitment.

POST CODE -10: ELECTRONICS & COMMUNICATION ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	1	1	1	-	3

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated:18.03.1996 the carry forward vacancies to be filled first by a Relevant community candidate in succeeding recruitment.

POST CODE -11: ELECTRICAL & ELECTRONICS ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	1	1
SC	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	2	-	-	1	-	2	-	-	-	-	-	-	1	-	-	1	3	2	6

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

POST CODE -12: ELECTRONICS & INSTRUMENTATION ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2	2

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

POST CODE -13: ENGLISH

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	3	4
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	1	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	3	4

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated:18.03.1996 the carry forward vacancies to be filled first by a Relevant community candidate in succeeding recruitment.

POST CODE -14: GARMENT TECHNOLOGY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-		1	1

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 01* CF Vacancy, interchanging procedure would be followed.

POST CODE -15: GEOLOGY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated:18.03.1996 the carry forward vacancies to be filled first by a Relevant community candidate in succeeding recruitment.

POST CODE -17:MATHEMATICS

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	2

Note: As per G.O.Ms.No.277, GA (SC & ST CELL .B) Dept., dated: 22.03.1976 and G.O.Ms.No.23 Backward Class (Welfare) Dept., dated:18.03.1996 the carry forward vacancies to be filled first by a Relevant community candidate in succeeding recruitment.

POST CODE -18: MECHANICAL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-A	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	2
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	1	-	-	-	1	1	2
BC-E	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	-	-	1	-	-	1
SC	-	-	1	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	4	-	4
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	2	1	-	-	2	1	-	1	-	-	-	-	3	-	-	1	7	2	10

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

POST CODE -20: MINING ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	1	2
BC-A	-	1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
ST	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	2	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-	2	1	2	5

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

POST CODE -22: PHYSICS.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	2

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 01* CF Vacancy, interchanging procedure would be followed.

POST CODE -23: TEXTILE TECHNOLOGY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	1*	-	-	-	-	-	1	-	1	-	1	2
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1*	-	-	-	1	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	1	-	2	3

Note: As per G.O.Ms.No.436 General Administration (Ser-D) Dept., Dated.15/10/1996 and in terms of Rule 22 (h) (ii) of A.P. State Subordinate Service Rules 1996. If no candidate is available for the said 02* CF Vacancies, interchanging procedure would be followed.

FRESH VACANCIES

POST CODE -02: AUTOMOBILE ENGINEERING

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	1	1	-	1	1	1	-	1	1	2	-	2	3	7
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1		1
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	1	-	2		3
ST	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	1	-	-	1	1	-	2	2	1	-	3	1	3	-	5	4	12

POST CODE -03: BIO MEDICAL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	2

POST CODE -04: COMMERCIAL & COMPUTER PRACTICE.

COMM UNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2	-	2
BC-A	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	2
ST	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	2
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	-	1	-	-	-	1	1	-	2	2	-	-	-	-	2	-	2	4	8

POST CODE -05: CERAMIC TECHNOLOGY.

COMM UNITY	**ZONE-1**				**ZONE-2**				**ZONE-3**				**ZONE- 4**				**TOTAL**				**GRAND TOTAL**
	OPEN ZONE		**LOCAL**		**OPEN ZONE**		**LOCAL**		**OPEN ZONE**		**LOCAL**		**OPEN ZONE**		**LOCAL**		**OPEN ZONE**		**LOCAL**		
	G	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	**G**	**W**	
OC	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	01
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**01**

POST CODE -06: CHEMICAL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	03
BC-A	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	01
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	01
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	2	05

POST CODE -07: CHEMISTRY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	1	-	-	-	1	-	1	1	1	1	-	1	3	-	1	2	6	1	10
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	01
BC-B	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	01
BC-C	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	01
BC-D	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	1	-	1	1	03
BC-E	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	1	02
SC	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2	-	02
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1	1	-	-	-	1	-	1	1	3	3	1	1	6	1	2	3	11	4	20

POST CODE -08: CIVIL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	1	1	1	3	1	-	1	4	1	1	2	5	2	2	4	12	5	23
BC-A	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1	-	02
BC-B	-	-	1	-	-	-	1	-	-	1	-	-	-	-	1	-	-	1	3	-	04
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	3	-	03
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	01
SC	-	1	-	-	-	-	1	-	-	-	1	-	1	-	1	-	1	1	3	-	05
ST	-	-	1	-	1	-	-	-	-	-	-	1	-	-	1	-	1	-	2	1	04
Sports Quota	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	01
TOTAL	-	1	2	1	2	1	6	1	1	2	6	2	3	2	11	2	6	6	25	6	43

POST CODE -09: COMPUTER ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	-	-	-	-	-	-	-	-	-	1	-	1	-	2	1	2	-	3	1	6
BC-A	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
BC-E	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
SC	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	1		1	-	2
ST	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	2
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	1	-	-	1	1	-	1	-	1	-	1	1	4	2	3	2	7	2	14

POST CODE -10: ELECTRONICS & COMMUNICATION ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	1	2	-	2	1	-	-	1	1	1	1	5	3	3	1	8	6	18
BC-A	1	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	3	-	1	-	04
BC-B	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	3	-	03
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	1	-	02
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	01
SC	-	-	-	-	-	-	1	-	-	-	-	1	-	1	1	-	-	1	2	1	04
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	02
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	-	1	2	-	4	1	1	-	2	2	2	4	11	3	6	4	17	7	34

POST CODE -11: ELECTRICAL & ELECTRONICS ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	-	2	1	1	-	1	-	2	-	2	1	1	1	7	4	5	1	12	6	24
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	02
BC-B	-	-	1	-	-	-	-	-	-	-	1	-	1	-	1	-	1	-	3	-	04
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	02
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	-	02
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	1	2	-	03
ST	-	-	1	-	-	-	1	-	-	-	1	-	1	-	1	-	1	-	4	-	05
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	4	1	1	-	2	-	2	-	4	1	4	3	15	4	8	3	25	6	42

POST CODE -12: ELECTRONICS & INSTRUMENTATION ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1

POST CODE -13: ENGLISH.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	1	-	1	-	-	-	-	-	-	-	-	1	3	1	1	1	4	1	7
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	2		2
ST	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	-	1	-	1	-	-	-	1	-	1	1	5	1	2	1	8	1	12

POST CODE -16: MARINE ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2	2	-	04
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	02
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1	1	1	-	1	1	1	-	-	-	-	-	-	-	-	-	2	2	2	06

POST CODE -17: MATHEMATICS.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	1	-	-	-	-	-	1	-	3	2	1	-	4	2	7
BC-A	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
BC-C	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
BC-D	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	1	1	-	2
BC-E	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	1	-	-	-	1	-	-	1	1	1	2	-	5	2	2	1	8	3	14

POST CODE -18: MECHANICAL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	1	4	2			2	1	1	-	2	1	1	1	8	2	3	2	16	6	27
BC-A	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	1	1	03
BC-B	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	2	1	-	1	3	05
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	01
BC-D	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1	-	02
BC-E	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	02
SC	1	-	1	-	-	-	1	1	-	-	1	-	1	-	1	1	2	-	4	2	08
ST	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	02
Sports Quota	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	1	-	02
TOTAL	2	1	7	3	1	1	4	3	1	-	4	1	6	1	10	7	10	3	25	14	52

POST CODE -19: METALLURGICAL ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	03
BC-A	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	01
BC-B	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	01
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ST	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	01
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1	2	2	-	-	-	1	-	-	-	-	-	-	-	-	-	1	2	3	06

POST CODE -20: MINING ENGINEERING.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1

POST CODE -21: PHARMACY.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	-	-	2	1	1	-	1	-	-	-	-	-	1	1	2	1	2	1	5	2	10
BC-A	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	1	02
BC-B	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	02
BC-C	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	01
BC-D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	01
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	01
SC	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	1	02
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	01
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1	3	1	1	-	1	1	-	-	-	-	2	1	5	4	3	2	8	7	20

POST CODE -22: PHYSICS.

COMMUNITY	ZONE-1				ZONE-2				ZONE-3				ZONE- 4				TOTAL				GRAND TOTAL
	OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		OPEN ZONE		LOCAL		
	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	G	W	
OC	1	-	-	1	-	-	-	1	-	-	1	1	1	-	2	-	2	-	3	3	8
BC-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
BC-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC-C	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1
BC-D	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	1	-	1	1	3
BC-E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1
SC	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	2	1	3
ST	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sports Quota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	-	-	1	-	-	-	1	1	-	2	2	2	-	5	2	4	-	7	6	17

ANNEXURE-II

NOTIFICATION NO.23/2018

SCHEME AND SYLLABUS FOR THE POST OF LECTURERS IN GOVERNMENT POLYTECHNICS (ENGINEERING & NON ENGINEERING) IN A.P. TECHNICAL EDUCATION SERVICE

(As per the Annexure – III to the G.O Ms. No. 141, Finance (HR-I Plg & Policy) Dept., Dt. 01/08/2016)

PART-A: Written Examination: (Objective Type)				
Paper	**Subject**	**No. Of Questions**	**Duration Minutes**	**Maximum Marks**
Paper-1	General Studies & Mental ability	150	150	150
Paper-2	Concerned Subject	150	150	300
PART-B:ORAL TEST (Interview)				50
Total				500
N.B: As per G.O.Ms. No.235 Finance (HR-1, Plg & Policy) Dept, Dt: 06/12/2016, for each wrong answer will be penalized with 1/3rd of the marks prescribed for the question in all Objective type papers.				

N.B: 1. The paper in concerned subject for Engineering streams is of Engineering Bachelor's degree standard.

2. The paper in the concerned subject for Non-Engineering streams is of P.G. Degree standard

3. The Question papers will be in English only.

1.	Architectural Engineering
2.	Automobile Engineering
3.	Bio Medical Engineering
4.	Commercial & Computer Practice
5.	Ceramic Technology
6.	Chemical Engineering
7.	Chemistry
8.	Civil Engineering
9.	Computer Engineering
10.	Electronics & Communication Engineering
11.	Electrical & Electronics Engineering
12.	Electronics and Instrumentation Engineering
13.	English
14.	Garment Technology
15.	Geology
16.	Marine Engineering
17.	Mathematics
18.	Mechanical Engineering

19.	Metallurgical Engineering
20.	Mining Engineering
21.	Pharmacy
22.	Physics
23.	Textile Technology

PAPER-I: GENERAL STUDIES AND MENTAL ABILITY

1. Events of national and international importance.
2. Current affairs- international, national and regional.
3. General Science and it applications to the day to day life Contemporary developments in Science & Technology and information Technology.
4. Social- economic and political history of modern India with emphasis on Andhra Pradesh.
5. Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh.
6. Economic development in India since independence with emphasis on Andhra Pradesh.
7. Physical geography of Indian sub-continent and Andhra Pradesh.
8. Disaster management: vulnerability profile, prevention and mitigation strategies,
   Application of Remote Sensing and GIS in the assessment of Disaster.
9. Sustainable Development and Environmental Protection
10. Logical reasoning, analytical ability and data interpretation.
11. Data Analysis:
    a) Tabulation of data
    b) Visual representation of data
    c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation
12. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems.

PAPER-II

1. ARCHITECTURAL ENGINEERING

Engineering Mechanics: Free body diagrams, Equilibrium equations, Analysis of determinate trusses, Simple stress and strain, Types of stresses, Principal stress and Mohr circle of stress, Elastic limit, Modulus of elasticity, Bending moment and shear forces, Moment of inertia, Deflection, Buckling & Crushing failures, Slenderness ratio, Torsion, Design of RCC & Steel Structures.

02. Basic Design: Design definition and description, Importance of Design, Fundamental elements of Design, Principles of design, elements of composition, Anthropometrics Study, Ergonomics, Study of Different spaces, Optimum areas for various functions, Space standards, Lighting and Ventilation, Design Process and thinking and Introduction to the study of aesthetics.

03. Building materials : Clay Bricks, Stones, Sand, Mortars, Cement, Cement mortar, Concrete, Reinforced cement concrete, Timber, Veneers, Paints and Varnishes, Glass, Rubber, Adhesives, Asphalt and Bitumen, Plastics, roofing and flooring materials, metals, ally steels, non-ferrous metals, stones- classification, properties, aggregates — coarse and fine aggregates, Admixtures.

04. Building Construction: Foundations. Footings, Walls, Lintels, Openings(doors & windows), Composite Masonry, Partition Walls, Staircases, Cladding, Sloping and flat roofs, Floorings, Structural steel work and Types of steel trusses.

05. Architectural Drawing and Graphics: Importance of Scale, Different forms, Architectural representation of different objects, Solid geometry, Building Geometry —isometric. Rendering, visualization skills and importance of free hand drawing.

06. Introduction of art and architecture: Importance of art, Development and exploration of art, Relationship between art and architecture, Role of an architect in society, relationship with other consultants, Technical knowledge and expertise, Evolution of Shelter forms.

07. **History of Architecture:** Architectural development in Egypt, Greek, Roman, Early Christian, Romanesque, Gothic & Byzantine. Indian Architecture. characteristic styles of modem architecture, Arts and Crafts movement, Art Nouvean, Monumentalism, Expressionism. Surveying and Site Studies: Principles of Surveying, Computation of areas and levelling, Theodolite surveying, Total station and GPS.

08. **Water supply and Sanitary Engineering:** Sources of water supply, Quality of water, Treatment of water, Distribution system of water, Collection and Treatment of refuse, Sewage, BOD, COD, Principles of drainage.

09. **Climatology:** Building Climatology, Tropical Climates, Thermal Comfort, Heat flow, Natural ventilation, passive cooling, Sun & Design Process.

10. **Landscape design and site planning:** Importance and role of landscape designing, Historical perspective, Elements in Landscape design, Plants and design, Landscape construction.

11. **Building Services:** Electrical services, Lighting, Air Conditioning, Elevators and Escalators, Telephones and EPABX, Security systems, Firefighting systems, Swimming pools, And Energy sources of building: wind energy, photo voltaic, bio mass, Waste disposal: Industries and hospitals, Hotel services and elevated flooring.

12. **Sociology of human settlements:** sociological aspects, Elements of society, Urbanization, Historic evolution, Transportation and communication, Principle of ekistics.

13. **Economics, Estimating and costing:** Introduction on economics, Micro and Macroeconomics, economic issues, Financing of a project, Quantity surveying and estimating (approximate and detailed) and rate analysis.

14. **Town Planning.** Town forms In urban planning and development processes, various levels of planning national, regional, urban, rural, local etc.. Objectives of town planning, O-D surveys, FSI planning of industrial and recreational areas, urban renewals. TCPO and Town planning organization in India.

15. **Building Acoustics:** Need to study acoustics, history of acoustics, generation, and propagation. transmission of sound, characteristics of sound, sensibility of human ear, resonance, reverberation time, Sabine's formula, echoes, principles of acoustical design process and sound isolation.

16. **Advances construction:** Decay and Damage, Building Failures, Maintenance and Renovation, guniting, Strutting. Underpinning, Grouting, Propping, Effect of ageing, Weathering.

17. **Professional Practice:** Types of offices for practice, COA registration and rules, IIA Code professional conduct, architects duties, principles of Indian contract act, Tenders, Contracts, Easements, Arbitration, Valuation, Role of Consultants, Building Bye-laws, National Building ode, Consumer protection act. Transfer of property.

18. **Computer applications:** hardware and Software requirements, Operating systems, Features of presentation package, drafting packages and benefits of internet technology.

2. AUTOMOBILE ENGINEERING

1. Thermodynamics: systems – Zeroth Law of thermodynamics – First law of thermodynamics – Second Law of thermodynamics – Entropy – Statistical thermodynamics – Air Compressors I.C. Engines cycles and Process – Combustion in I.C. Engines – Engine performance – Scavenging and supercharging of Engines – Modern development in I.C. Engines – I.C. Engine plant layout.

2. Heat Transfer: Conduction Convection – Thermal Radiation – Heat Exchangers.

3. Fluid Mechanics and Machinery: Fluid properties – Dimensional analysis – Fluid static's Flow past immersed bodies – Centrifugal pumps – Axial flow pumps – Rotary pumps – Reciprocating pumps – Oil Hydraulic systems.

4. Instrumentation: Transducers – Flow measuring transducers – Temperature measurement – Strain gauges – Mechanical measuring devices – Slip gauges – Plug gauge – Micrometers in bars optical flat etc.

5. Automobile chasis & Systems: Chasis layout – Shock absorbers in dependent suspension – torsion bars – gear suspension – wheel balancing – tyres and tubes – constructional details of the engine – Ignition system – Fuel system – Lubrication system – Cooling system – Transmission system – Brakes steering mechanism – Electrical circuits and equipment's – Engine troubles – Air conditioning system – Modern trends in automobiles & Engines.

6. Material Science: Crystallography of metals – Binary alloys – Constitution and equilibrium diagram – methods of studying metal structure – Heat treatment – of steels – Casehardening and surface treatment of steels – Non Ferrous metals and alloys – Creep – Fatigue.

7. Kinematics of Machines: Kinematics – Velocity and Acceleration – Properties of instaneous centre – Gears – Gears trains – Oams – Governors – Brakes and dynamometers – Clutches – Power transmission – Chain drives.

8. Dynamics of Machines: Static force Analysis – Dynamic Force Analysis – Dynamics of Reciprocating Engines – Balancing – Vibration Analysis of Single degree freedom systems – Torsional Vibrations – Vibration isolation.

9. Design of Automobile Machine Parts: Design of welded joints Design of bolts & nuts Shafts and Axles – Curved beams – Springs – Bearings – clutches – Brakes – Design of connecting rod – Crank shaft fly wheel.

10. Production Technology: Machine tools – Lathes – Shaper, planner and slotting machines Drilling and boring machine – Milling – Lapping – Tool room – Electro machining – Welding – Brazing – Foundry.

11. Industrial Engineering: Industrial management – personnel function – Production facilities – Production Planning and control – Wages and incentives Cost Control – Marketing and Sales Promotion.

3. BIOMEDICAL ENGINEERING

Physiology

Cell biology and biopotentials, leuromuscular physiology, espiratory system, Cardiovascular physiology, Renal physiology, Gastrointestinal and endocrine physiology) Auditory system and Vision

Clinical Immersion

Cell biology: Nernst equation - derivation and its significance. Refractory period. Characteristics of stimulus. Strength-duration relationship. Electrical equivalent circuit of an axon.
Membrane time and space constants. Hodgkin-Huxley formulation. Membrane conductance. Nerve conduction membrane properties from current voltage relations, models of squid axon. Propagation of impulses in unmyelinated and myelinated nerve fibre. Electrical properties of receptors. Generator potential of Receptors. Intensity-frequency relationship. Electrical properties of synaptic junctions - EPSP and I PSP.

Electrical Activity of the heart. Conduction system of the heart. Characterstics of Action potentials at SA mode, Tria, AV Node, purkinje firbres and ventricles, ECG complexes. The international standard 12 leads of ECG. Standard leads of Einthoven, precordial leads and augmented limb leads. Relationship between unipolar extermity leads and standard bipolar leads. Volume conductor fields: Bio-electric sources, Volume-conductor formulation. Solid angle computation. Infinite cylindrical axon, core conductor model non-homogenous media, integral equations.

Electrical activity of skeletal muscles-motor unit potentials. EMG wave form. Survace and needle electrodes for EMG. Velocity and their changes in normal and abnormal states. Fatigue and conduction - chemical significance.

Introduction to bioelectric Phenomena of hearing - Mechanical equivalent schematicdiagram of the ear. Mechanical transformer of the middle ear. Frequency analysios of sound by the basilar membrane. Cochelear microphonics.

Interaction between Engineering and life sciences. Definition of Biomedical Engineering, its scope. The role of Biomedical Engineer in Health care delivery systems. Medical Electronics Industry Research, Development and education.

Application of Engineering concepts and methods for understanding Physiological systems. Basic electrical and Mechanical properties skeletal systems, muscular system, heart and brain. Nervous system as an internal communication system of the human body, Sense Organs.

Electrophysiology: Functional structure of a cell. Basis of biopotentials. Resting potential of a nerve cell and its ionic mechanisms. Properties of excitable membranes. Action potential generation, its ionic mechanism and its characteristics.

Physiological signals, Characteristics, Basis of ECG, EMG, EEG and qualitative treatment of instrumentation for measuring these signals.

Biopotential, Electrodes, Electrode - Electrolyte Interface. Internal electrodes like needle electrodes and microelectrodes.

Bio-Medical Instrumentation.

General Characteristics . of medical instrumentation like linearity, range, frequency response, signal-to-noise ratio and stability. Equivalent circuit Properties.

Broad classification of Biomedical Instrumentation for Clinical practice that is:

1. Instrumentation for Diagnosis, ECG, EEG, EMG, PCG etc.,
2. Therapeutic Devices - Stimulators, diathermy equipments etc.,
3. Prosthetic Devices - Pacemakers, Artificial Organs.
4. Visualising Devices - X-ray, Ultrasound etc., fibre optic endoscope.
5. Electrosurgical Devices - HF Surgery, Laser Surgery.
6. Data Storage & Analysis - Computers in medicine.

7. Analytical Instruments - Photocolorimetry, Spectrophoto Meter, Electrophoresis, Centrifuges, Waterbath etc.,Hospital illumination, Theatre illumination, Requirements and typical arrangements. Miscellaneous equipments. Development of instrumentation for Clinical practice and Medical Research, Introduction. Comparative study of industrial and Medical Instrumentation.

Electrical Safety and Standards:

Electrical hazards during Bioelectric monitoring: safety, Codes, Standards. Micro and Macroshock and their physiological effects. Leakage currents and protection by use of isolation transformers. Equipotential grounding and earth free monitoring.

Electrical factors in Hospital Design: Electrical power supply systems in a hospital building, Proper installation and grounding for providing safe patient - electrical environment.

Sensors and transducers for Biomedical applications:

Transducers for physiological application. Stratic-types like variable R.L. & C, LVDT, Therma couples, Thermistors Photo electric and Dynamic types like piezoelectric and moving coil type and their applications. Special requirements.

Amplifiers for Biomedical applications:

Operational amplifiers, Differential, Instrumentation amplifier, Carrier amplifiers, Phase sensitive detector for LVDT. Principles of wave generation and shaping.

Recorders and play divices for Bio-Medical applications. General features of ink-jet, thermosensitive and optical recorders. General features of display devices for bio-signals. Data acquisition and display using micro computers. ECG recording system. Block schematic diagram of ECG machine; amplifiers : circuits for ECG. Special types of ECG recorders. Noise problems and their elimination.

Electro-encephalography: Block schematic diagram of EEG recording system. General features of different blocks : specification of EEG amplifiers : qualitative requirements, 10-20 electrode system, Resting Rhythms and sleep stages.

Electro Myography: Block schematic diagram of EMG recording system. EMG amplifiers. Design considerations of EMG amplifiers. Data display for EMG.

Blood Pressure and blood flows. Electronic techniques for indirect and direct measurement of blood pressure: measurement of blood flow by electromagnetic, doppler and plethysmographic methods.

Respiratory Measurements and Aid; Principles and techniques of impedance pneumography and pneumotachograph. Spirometry principles

Ventilators : Parameters, system Concepts, Flow Gauges, Valves Humidifers. Birds, Emerson, Bear Ventilators.

Biosensors: Electrochemical biosensors, impedometric, voltammetry, amperometry, mechanical transducers, MEMS-based

Anaesthesia Equipment, Boyle's Apparatus, Gas Distribution Systems.

Audiometry: Common Tests and procedures, Airconduction, Bone Conduction, Masking, Schematic Functional Diagram of an Audiometer.

Hearing Aids: Different Types, Comparision of Microphones, Receivers and Amplifiers, cochlear implants

Biophotonics, Introduction to the principles of optics, lasers and biology, the interaction of light with cells and tissues, and various optical imaging, sensing and activation techniques and their applications in biomedicine.

Lasers: Basic Principles of Laser, Different types of Laser Equipment used in Ablations, Surgery. Laser Safety prinCiples and classifications.

Fibre Optics: Principles and Applications : Endoscopes, Neonatural insturmentation, Incubators, Apnea Monitor, Opthalmic Instrumentation : Intra - ocular Pressure Measurement, Contacting and Non-contacting Types, Refractometers.

Optical microscopy, phase contrast microscope, Differential

interference contrast microscope, Confocal and multiphoton microscopy, Fluorescence microscopy.

Diffuse Optical tomography and Optical coherence tomography

Optical sensors, Fiber optics sensors, Surface plasmon resonance-based biosensing

Methods of Chemical analysis: Absorption photometry: Emission photometry; Fluorometry, Introduction to autoanalyzer. Chromatography for blood gas analysis, Colorimeters., Spectrophotometers, Electrophoresis.

Biomedical Imaging

Introduction to Radiography: Physical properties of; X-rays. Principles of generation of x-rays. Radiation energy distribution. Collimators and grids, Fluoroscopy. Image intensifiers.

Sonography, basic principles, ultrasound-based imaging, Ultrasound Applications for Surgery: Lithotripsy, Principles and Applications. Ultrasonics: Basic principles of Medical Ultrasonics, Echo Techniques, Functional Block Diagram of Basic Pulse-Echo System for Diagnostic Purposes. Different Display Modes A-Mode, B-Mode, M-Mode, Types of Scan-B Scan, Principles of Echocardiography and Echoencephalography with Schematic Block Diagrams. Sector Scanners, and phased array scanners.

Introduction to Doppler Ultrasound, Blood flow through heart valves, peripheral vessels Dopler flow meter. Display Devices for Ultrasonic Echo Imaging. Biological Effects of Ultrasound and Safety Precautions.

Phonocardiography: Origin of heart sounds. Phonocardiographic instrumentation consisting of microphone, filters and signal conditioners.

Computed Tomography: Basic Principles, System Components and Functions of Scanning System, Processing Unit, Reconstruction Techniques - Viewing systems, storage and documentation. Medical applications and safety precautions.

Magnetic Resonance Imaging: Basic Physics of Magnetic Resonance Imaging. Signal Excitation and Detection. Schematic Functional Diagram of MRI Scanner with its subsystems. Magnet, Gradient system. R.F. Transmitter Receiver system, Computer and Image Display, Medical Applications and safety precautions.

Radio Nuclide Imaging: Principle, Schematic functional diagram and Components of Gamma Camera. Medical Applications, safety and precautions.

Position emission tomography (PET) and Single Photon Emission Computed Tomography (SPECT): Basic Principles, Nuclear Reactions and production of precursors. Detector Materials reconstruction techniques.

Medical Thermography: Basic Principle, Functional Block Diagram of thermo graphic equipment, scanning and display arrangements for Infra-Red Imaging, Medical applications.

Biomedical Devices

Defibrillators : D.C. Defibrillators of capacitive discharge and delay line capactive discharge with basic circuit diagrams. Types of electrodes and their features. Testing and safety.

Cardioverters : Working Principles, Scheme of synchronizing D.C. Defibrillators with the R-wave of ECG. Testing and safety. Cardiac pacemakers : Types -

i. Asynchronous and Synchronous (demand) mode of operation.

ii. External and implantable, Asynchronous Pacemakers.

Working principles, block diagram and circuit diagram of blocking oscillator asynchronous pacemaker.

Synchronous / Demand Pacemaker: Working principles,, modes of triggering-ventricular triggered (QRS triggered) and atrioventricular synchronized pacemaker (P wave triggered).

Implantable pacemaker: Technical and qualitative requirements

of power supplies, lead wires and electrodes. Transcutaneous R.F. powered Cardiac pacemaker system. Susceptibility of implanted pacemaker to electrical interference and remedial measure. Assist Devices for the Heat : Principles of external counter-pulsation techniques. Infra-
aortic Balloon pump. Auxilliary ventricle and schematic for temporary by-pass of left ventricle.

Prosthetic Heart Valves: Qualitative requirements. Categories Mechanical and tissue valves. Types of mechanical Valves - ball and cage, tilting disc and bileaflet valves. Types of tissue valves - Homografts or allograft (human cadaver) and Heterografts or Xenografts (Porcine or Bovine). In vitro performance testing of prosthetic heart valves using a pulse duplicator.

Heart- Lung Machine: Governing principles, qualitative requirements, functional details of bubble, thin film and membrane - Type of blood oxygenators.

Haemodialyser: Qualitative requirements. General Scheme of operation. Types of Exchangers, block diagram, electronic control and monitoring systems.

Intensive Coronary Care Concepts: Systems organisation, Critical Physiological parameters to be monitored. Layout and safety precautions.

Physical Therapy Equipment. Short wave, Microwave and Ultrasonic

diathermy.

4. COMMERCIAL AND COMPUTER PRACTICE

1. **Financial Management:** Meaning, nature, objectives and scope of financial management. Capital budgeting, process, techniques. Sources of finance. Cost of capital - cost of various sources of finances. Leverages - operating and financial leverages. Capital structure theories. Working capital management - cash, receivables and inventory management.

2. **Financial and management accounting:** Techniques of analysis of financial statements - comparative and common size statements, trend analysis and ratio analysis. Funds flow and cash flow analyses.

3. **Managerial Economics:** Meaning, nature and scope of managerial economics. Demand analysis. Production and cost analysis. Market structure - perfect and imperfect markets.

4. **Business environment:** Meaning and components of business environment. Industrial policies, and 1991. Liberalization, privatization and globalization. WTO.

5. **Marketing management:** Meaning, concepts, nature and scope of marketing management - marketing environment. Consumer behavior and market segmentation. Product, price, promotion and Channel management.

6. **Quantitative techniques:** Sampling and sampling methods. Probability and probability distributions - hypothesis testing. Parametric tests (Z, t-tests and ANOVA) and non-parametric tests (Chi-square tests).

7. **Business Mathematics:** Simple and Compound Interest, Calculating value of annuities, Functions and graphs, Limits and differentiation, Basic Matrix operations, Basics of Linear Programming.

8. **Computer tools for office applications:** Basic knowledge of computers and its peripheral equipment, Use of word processing (such as MS Word) and spreadsheet management (such as MS Excel) software. Use of internet and email for office correspondence. Use of accounting packages (such as Tally).

5.CERAMIC TECHNOLOGY

FUELS, FURNACES & PYROMETRY:

A. FUELS:

1. **Solid Fuels:** COAL: Coal formation theories, Mineral matter, Classification, handling and storage, washing, general properties, Calorific value, grind ability etc.

2. **Gaseous Fuels:** Various gaseous fuels like Producer gas, Water gas, Coke Oven gas, other gaseous fuels like blast furnace gas, LPG, CNG, Natural gas – Properties like composition, calorific value.

3. **Liquid Fuels:** Petroleum products – Origin, composition, refining process, distillation of petroleum products – brief outlines. Synthetic fuels, storage and handling – general industrial practices.

4. **Properties:** Analysis of coal, gaseous fuels, liquid fuels.

B. FURNACES:

1. **Combustion:** Combustion calculations, liberated heat, available heat, waste gas – Solid, Liquid and Gaseous fuels – Pulverisation of fuel, atomization of fuel, propagation of gaseous mixture, diffusion of flame, control of combustion.

2. **Heat Transfer:** Heat transfer to charge by conduction, convection and radiation, flow of heat through furnace walls, heat losses, heat balancing, heat recovery – recuperators and regenerators.

3. **Types of furnaces:** Various types of furnaces and kilns used in ceramic industries

C. PYROMETRY:

Measurement of temperature – temperature scales – thermometers – pyrometric cones thermoelectric current – thermo couples – resistance pyrometers – radiation pyrometers – optical pyrometer.

CERAMIC SCIENCE

CRYSTAL CHEMISTRY: Ionic bond with examples – Potential energy curve-bond strength Lattice energy – Covalent Bond – Atomic and molecular orbitals, hybridization – Metallic bond Vanderwall's bond – Hydrogen bond, Mixed bond. Relation to bond vis-à-vis melting point, hardness, electrical and thermal properties – Crystalline defects; Point defects, line defects.

1. **PHASE EQUALIBRIA AND PHASE DIAGRAMS:** Gibb's rule and its interpretation; condensed system – One component system – Binary diagrams – Lever rule – Familiarity with SiO_2 – Na_2O, CaO – Al_2O_3, SiO_2 – Al_2O_3 – Ternary phase diagrams - Na_2O, CaO - SiO_2, CaO - Al_2O_3 - SiO_2, MgO – CaO – SiO_2.

2. **MECHANICAL PROPERTIES:** Elastic properties – Stress & Strain – tensile, compressive and shear stress strain, elastic moduli – Poisson's ratio – PLASTIC DEFORMATION – Simple oxides – dislocation and slip, creep, effect of temperature, Polyphase materials – influence of microstructure – BOTTLE FRACTURE – Fracture energy – Flaws and their origin and role. Hardness & Abrasion – Relationship with other properties, elastic modulus, creep – Abrasives

3. **THERMAL PROPERTIES:** Specific heat – Latent heat of fusion – Fusion point – Melting point. Thermal expansion – Simple ionic crystals – Class – Polycrystalline materials. Thermal conductivity – Theory – Simple oxides – Polycrystalline materials – Thermal stress – Permanent and temporary stress – Spalling of ceramics – Stress at interfaces.

4. **OPTICAL PROPERTIES:** Reflection and refraction – Scattering and opacity, absorption and radiation – Ionic colour in vitreous systems – Colloidal colours – Carbon – Sulphur

5. **CHEMICAL PROPERTIES:** Surface chemistry of vitreous materials – attack of water, alkalies and acids, electrode glasses, durability of glazes and enamels.
6. **ELECTRICAL AND MAGNETIC PROPERTIES:** Ionic conduction – Electronic conduction – Dielectric constant – Dielectric loss, dielectric strength, ferroelectric phenomena. Para- magnetism and ferromagnetism in ceramics.

GLASS TECHNOLOGY

INTRODUCTION: Glass industry in India – common uses – import and export of glass, present and future status.

PREPARATION OF GLASS BATCH: Glass composition – melting and fabrication, characteristics, properties and cost; composition range.

MAJOR INGREDIENTS: Sand, Limestone, Dolomite, Soda ash, Feldspar, Nephelene syenate etc.

MINOR INGREDIENTS: Melting accelerators, Refining agents, docolourisers.

CULLET: Cullet and its use- BATCH calculations

GLASS MELTING PROCESS: Particle size, melting, volatilization, refining – sources of gas bubbles – fused batch interface and re-boil, identification of gases, refining agents, chemistry of refining actions – Homogenisation – rate of homogenization – viscosity glass at various stages, standard viscosity points, working characteristics, viscosity – temperature relationships of common glasses.

FABRICATION PROCESSES: Conditions of glass; feeding; blowing and pressing – effect of variations in composition on the working characteristics

ANNEALING & TEMPERING: Release of stress, annealing constant, determination of annealing schedules for slabs, continuous plate containers, tempering.

TESTING & QUALITY CONTROL: Raw materials; Sieve analysis; purity, batch analysis, density, composition and homogeneity, SQS chart, softening point and thermal expansion. Defects in Glass; seeds and blisters, cords, striae, strain and stones, methods of testing, sources of trouble and their elimination. Fabrication defects; various defects of fabrication. Testing of container; weight and capacity, flat glass.

LAY OUT OF A MODERN GLASS PLANT: Flow diagram – Site selection – storage of raw materials – batch house – melting furnace – infrastructure facilities.
BATCH PREPARATION: Handling, mixing and charging of raw materials.
GLASS MELTING TANK FURNACES: Types of tank furnaces – general features – combustion – temperature distribution – heat transfer and covection currents – heat recovery and insulation, heat balance, thermal performance. DESIGN, CONSTRUCTION & OPERATION of glass tank furnace – Electric melting.

POT MELTING PRACTICE: Types of glasses suitable for pot melting, ports and pot furnaces.

FORMING PROCESSES: Hand operations, fore hearth and feeder, machine for blown ware, press machines, moulds, parison and blow moulds. Paste moulds. Rolling of glass – drawing of sheet glass – annealing Lehr – special processes surface coating – other operations – table working.

SPECIAL GLASSES: Heat resistant glasses – Fiber glass – Glass ceramic – Optical glasses – Glasses for electrical and electronic industries.

ENAMELS

Introduction: Enamels & ceramic coatings – metal bases – pre-treatment of metal and non- metal surfaces – de-enamelling – aluminum alloys – Enamel glass composition – batch calculations – typical examples of compositions for various steels – frit making – smelting – quenching – drying – smelting furnaces – milling and mill additions. Application and Firing; Control of slips – drying & brushing, firing – enamelling furnaces – special firing methods, properties and tests. Defects and remedies of enamelling.

W HITE WARE AND HEAVY CLAYWARE

RAW MATERIAL PREPARATION: Particle size reduction – methods – comparison – analysis Mixing methods – blunger – pug mill – u mixer, Muller mixer etc – Forming methods – Slip casting - rheology of slip – plastic forming – power pressing – special forming methods.
DRYING: External parameters – critical moisture content – drying rates – driers – types – shrinkage - defects

CHANGES DURING FIRING: Thermal decomposition – changes in ceramic body – sintering – microstructure
EQUIPMENT & MACHINERY: Crushers – grinders – mixers, separators, shaper, presses (mechanical, hydraulic, isostatic) – die materials and design – driers - glazing machines – ancillary equipment.

FURNACES/KILNS: Down draft kiln – updraft kiln – coal or oil fired – flues – chimney & stack calculations, complete operations.
Tunnel kilns – oil, gas or electric fired – construction – operation – heat balancing Roller Kilns – design – function – cycles – maintenance
Others: burners – blowers etc.

FIRING PRACTICE: Furnace loading – lighting – firing schedule – temperature control – seger cones – firing defects – warpage – Microstructure – changes in microstructure in relation to sintering, typical ceramic microstructures and their control

PLANT DESIGN: Location – assessment – economics – factory layout – flow sheet – project report.

R E F R A C T O R I E S

CLASSIFICATION: Classification of Refractories – Acid - Basic – Neutral – Special Refractories

APPLICATIONS: Industries of Iron & Steel – Gas plants – Powerhouses – Non-Ferrous metals Ceramic – Cement & Fertilisers.

REFRACTORY INDUSTRY: Status and scope of Indian Refractory industry – Lay out of modern Refractory plant.

ALUMINO-SILICATES: Raw materials – Manufacturing process – Microstructure & properties Uses.

SILICA REFRACTORIES: Manufaturing process – raw materials & composition – microstructure – properties and uses.

BASIC REFRACTORIES: Magnesite – Dolomite – Chrome – combination Refractories – manufacturing process – Microstructure – Properties and uses.

SPECIAL REFRACTORIES: Alumina – Raw materials – Manufacture – Properties & uses. Fusion cast Refractories – others like zircon, carbon, silicon carbide – Spinel and refractory cements – castables – ramming masses.

C E M E N T T E C H N O L O G Y

CEMENT INDUSTRY: Indian and A.P. scenario – Large – medium – small scale units.

TYPES: Varieties of cements – occurrence – uses – manufacturing procedures.

PORTLAND CEMENT: Manufacturing methods – Wet process – advantages and disadvantages; Dry process – advantages and disadvantages. Rotary Kiln – construction – operation – Refractories used – various chemical phases present in cement. Properties of cement – testing methods.

SPECIAL CEMENTS: Rapid setting cement, Pozzolona, Slag cement etc.

SPECIAL CERAMIC MATERIALS

HIGH TEMPERATURE CERAMIC-OXIDES: Beryllia – Magnesia – Alumina – Zirconia – NON-OXIDES – Silicon Nitride – Boron nitride – Silicon carbide – Boron Carbide – Methods of production – Properties – Thermal – Electrical – Thermo mechanical behaviour.

ELECTRICAL & ELECTRONIC CERAMICS: Dielectric Ceramics – High Voltage – low frequency applications – porcelain insulators manufacture – Low voltage High frequency applications – insulators – steatite, Magnesium titanate, Cordierite, Fosterite. FERRO ELECTRIC CERAMICS – Barium Titanate – Lead Zirconium Titanates etc., - MAGNETIC CERAMICS – Soft Ferrites – hard ferrites – Magnetite – Nickel Zinc ferrites, Yttrim Iron garnet, Hexaferrites of Barium, Lead and Strontium - CERAMIC

SEMI CONDUCTORS: Germanium – Silicon – Gallium – Antimonide – Silicon carbide etc.

CERAMIC COMPOSITES: Types – Fibres and Whiskers – Fibre reinforced composites – cermets – Metal castings – Transformation toughened ceramics – Cutting Tools – Wear resistant ceramics – Grinding media, Ceramic engine parts.

NUCLEAR CERAMICS: Methods of production and properties – Uranium Oxide; Uranium carbide, Thorium Oxide; Beryllium Oxide etc.

6. CHEMICAL ENGINEERING

PROCESS CALCULATIONS AND THERMODYNAMICS: Laws of conservation of mass and energy; use of tie components; recycle, bypass and purge calculations; degree of freedom. Zeroth law; Isothermal states, Principles of thermometry. Scales of temperature. First and second laws of thermodynamics, Equations of state and thermodynamics properties of real systems;.Phase equilibria; excess properties and correlations of active components; chemical reaction equilibria. Basics statistical thermodynamics.

FLUID MECHANICS AND MECHANICAL OPERATIONS: Fluid statics, Properties of fluids: viscosity, density, surface tension, etc., Newtonian and non-Newtonian Fluids, macroscopic energy balance, Bernoulli equation, dimensional analysis, Navier-Stokes and continuity equations, flow through pipelines, flow meters, pump and compressors, elementary boundary layer theory.
Size reduction and size separation, free and hindered settling, centrifuges and cyclones, filtration, agitation and mixing, packed and fluidized beds, storage and handling of solids.

HEAT TRANSFER: Conduction, convection and radiation, heat transfer coefficients, steady and unsteady heat conduction, boiling, condensation and evaporation, types of heat exchangers and evaporators and their design principles.

MASS TRANSFER: Classification of Mass Transfer Operations (Direct contact of immiscible phases, Membrane separation of phases, Direct & Indirect Operations), Diffusion & Mass Transfer, Fick's law, mass transfer coefficients, film, penetration and surface renewal theories; momentum, heat and mass transfers analogies; Gas-Liquid Operations (Bubble Columns, Multistage tray towers), Liquid-Liquid Operations, Solid-Liquid Operations.

CHEMICAL REACTION ENGINEERING: Rate of reaction, molecularity, Transition state theory; Concepts in Chemical Kinetics; kinetic of homogeneous reactions; Analysis of Rate Data, Differential and integral methods of kinetic analysis; Single and multiple reactions in ideal reactors; Non-isothermal reactors; Non-ideal flow: F & E curves, axial dispersion; kinetics of heterogeneous catalytic reactions, diffusion effects in catalysis.

INSTRUMENTATION AND PROCESS CONTROL: Measurement of process variables; dynamics of simple systems: CSTRS, heat exchangers, transfer functions, response of systems, process reaction curve, controller modes (P, PI and PID); control valves; analysis of closed loop systems including stability, frequency response (including Bode plots) and controller tuning.

PLANT DESIGN AND ECONOMICS: Design of chemical process plants, principles of process economics and cost estimation.

CHEMICAL TECHNOLOGY: Overview of Chemical Process Technology. Preparation of process flow diagrams, Instrumentation diagrams and Process symbols. Petrochemical Industries: production of petrochemical feedstocks, olefins and aromatics, intermediates from olefins and aromatics. Inorganic Chemical Industries: chlor-alkali industries, manufacture of acids, ammonia, and fertilizers. Fermentation: manufacture of sugar, starch, and its derivatives, manufacture of industrial alcohols. Edible oils: extraction and refining, fat splitting, soaps and detergents.

7. CHEMISTRY

Inorganic Chemistry:

1. Chemical periodicity: Periodic properties
2. Atomic structure, nuclear properties, molecular symmetry, bonding in polyatomic molecules, concepts of acids and bases
3. Main group elements and their compounds: Synthesis, bonding and structure.
4. Transition metal Chemistry and coordination compounds: Structure and bonding, Molecular Orbital (MO) theory of complexes, Crystal field theory (CFT), Jahn-Teller effect, magnetic properties, orbital splitting, spin-orbit coupling, calculation of CFSE, spectra of octahedral and tetrahedral complexes of dl to d9 systems, and reaction mechanisms
5. Organometallic compounds, their synthesis, bonding and structure, and reactivity. Organometallic compounds in homogenous catalysis.
6. Cage like structures and metal clusters
7. Analytical Chemistry: separation techniques, spectroscopic electro- and thermo-analytical methods.
8. Bioinorganic Chemistry — photosystems, porphyrins, metallo-enzymes, oxygen reactions, electron transfer, nitrogen fixation.
9. Characterization of inorganic compounds by infrared-, Raman- NMR-, electron spin resonance (EPR)-, UV-Visible, and Mass spectroscopic techniques
10. Nuclear chemistry — nuclear reactions, fission and fusion and their applications, radio-analytical techniques and activation analysis.

Physical Chemistry:

11. Quantum mechanics: Fundamental concepts and applications, hydrogen atom, and angular momentum
12. Atomic structure and hydrogen atom spectra, chemical bonding
13. Group theory: Basic principles and applications
14. Kinetic theory of gases: Equations of state and collision theory
15. Chemical Kinetics: order and molecularity of reactions, Arrhenius
16. equation, Activated complex theory of bimolecular gaseous reactions and Lindemann theory of unimolecular gaseous reactions, experimental methods for studying reaction rates.
17. Chemical Thermodynamics: First Law, Joule-Thomson effect, Thermochemistry, Second law, Entropy, Maxwell relations, Van't Hoff equation
18. Electrochemistry: Electrochemical cells and cell reactions, Standard electrode potentials, Nernst equation, specific, equivalent and molar conductivities, Kohlrausch's law; Concentration cells, Debye-Huckel theory and Debye-Huckel-Onsager equation, transport number and ionic mobility, potentiometric and conductometric titrations, electrical double layer.
19. Photochemistry: Laws of photochemistry, Grothus-Draper Law, Stark-Einstein law, kinetics of photochemical reactions
20. Statistical Thermodynamics: Types of statistics, partition functions, thermodynamic properties of monoatom c ideal gases, Einstein theory of heat capacities
20. Surface Chemistry: Adsorptio6 isotherms. and BET theory of multilayer adsorption

21. Catalysis: Acid-base catalysis, enzyme catalysis, Michaelis-Menten equation, heterogeneous catalysis.

22. Molecular spectroscopy: Principles and applications of rotational and vibrational spectroscopy, NMR and EPR.

23. Chemical equilibrium: basic concepts, Solubility product, common ion effect, pH and buffer solutions, acids and bases, hydrolysis of salts, phase equilibrium.

24. Solid state: crystal systems, classification of binary and ternary compounds, diffraction techniques, bonding.

Organic Chemistry:

25. Heterocylic compounds- classification based on the nature of hetero-atom, size of the ring and electron deficient nature of the ring.

26. General and comparative study of furan-, pyrrole- and thiophene- ring transformations. Comparison with benzenoid compounds: pyridine, quinoline, isoquinoline and acridine.

27. Aromaticity of cyclic compounds: synthesis, reactivity and properties.

28. Organic reaction mechanisms: Structure and reactivity of organic molecules-inductive effect, mesomeric (resonance) effect and hyper-conjugation, dipole moments, acidic and basic strengths of organic compounds.

29. Concepts of organic reaction mechanisms: Aromatic substitutions: Electrophilic and Nucleophilic substitutions (S_N1, SN2, SNi, S_N2'), Elimination (El and E2), Cope- and Hofmann- eliminations.

30. Study of reaction intermediates: classical and non-classical carbocations-, carbanions-, carbon free radical- and carbene- in organic reactions.

31. Rearrangements: Dienone-Phenol-, Baeyer-Villiger-, Favorskii-, Beckmann-, Perkin-, Fries-, Pinacol-pinacolone- rearrangements.

32. Name reactions: Wurtz-, Friedel-Crafts-, Gattermann-, Diels-Alder-, Reformatsky-, Rosenmund- reactions.
33. Organometallic reagents and their application to organic reactions: RMgX, RLi, RZnX, R2CuLi

34. Transition metal catalysis: Heck-, Stille-, Sonogashira-, Suzuki-, Buchwald-Hartwig- coupling reactions.

35. Carbohydrates: General reactions of monosaccharides — configurational studies on glucose, fructose, sucrose, and recent advances in the Chemistry of cellulose and starch.

36. Proteins: Introduction to proteins, their classification, nomenclature and distribution in nature, simple amino acids — their isolation and their synthesis.

37. Alicyclic compounds: Mono-terpenes

38. Stereochemistry: Optical and geometric isomerism, configuration of saturated molecules, dextro and laevo, and R- and S- configurations of optically active compounds, racemic mixtures, racemization and resolution.

39. Characterization of organic compounds by infrared (IR)-, NMR-, UV-Visible-, and Mass- spectroscopy techniques.

8. Civil Engineering

1. ANALYSIS OF STRUCTURES:

Stresses in beams; combined bending and direct stresses; axially and eccentrically loaded columns
Closed-coiled and open-coiled; helical springs under axial load and axial twist; carriage springs
Analysis of thin and thick cylinders; compound cylinders
Analysis of statically determinate plane trusses; method of joints and method of sections
Deflection and slope of beams by Double integration Macaulay''s, Moment area and Conjugate beam methods
Analysis of statically indeterminate beams by flexibility and stiffness methods; propped cantilevers, fixed beams and continuous beams
Strain energy method, slope-deflection method, moment distribution method and Kaini's method of analysis of indeterminate structures.
Struts subjected to axial loads, buckling, Euler's formula for strut with different support conditions

2. STRUCTURAL DESIGN:

Reinforced concrete, concrete technology, R.C.C. Design, working stress method and limit state method, Design of beams, design of axially loaded columns, Design of one-way and two-way slabs, design of continuous beams and slabs; Design of wall footings and isolated footings, combined footings, raft foundations, and retaining walls by limit state method, water tanks, Deck-slab and T-beam bridges by working stress method. Structural Steel — design of riveted and welded joints, design of tension members; Design of compression members; simple and compound beams. Design of plate girders, crane girders and roof-trusses. Elements of pre-stressed concrete.

3. FLUID MECHANICS AND HYDRAULIC MACHINES:

Fluid properties; fluid statics; fluid-flow concepts; Laminar and turbulent flow; steady and unsteady-flow, uniform and non-uniform flow; continuity equation; Euler's equation of motion; Bernoulli's equation, Hydrostatic force on plane and curved surface
Momentum equation and applications; Moment of Momentum equation, Dimensional analysis and similitude; Flow through Pipes: Viscous flow-laminar flow through circular pipes; velocity distribution in laminar flow. Turbulent flow in pipes, velocity distribution in turbulent flow
Flow Measuring Devices- Measurement of discharge, venturimeter, orifice meter, notches and weirs, Measurement of velocity, Pitot tube
Hydraulic machines; Turbines and pumps; basic equations; performance selection, specific speed

4. WATER RESOURCES ENGINEERING:

Steady flow through open channels. Uniform flow in channels; Chezy's and Manning's formulae. Specific energy and critical depth. Hydraulic jump — Momentum equation for a hydraulic jump. Surface Water hydrology; Hydrologic cycle, hydrologic data- measurement of precipitation, evaporation, transpiration, and infiltration. Runoff, determination of run-off. Steam gauging; Hydrograph *and* unit hydrograph, flood routing. Ground water resources, Darcy's law, Dupuits equation, yield of wells, recuperation test.

5. SURVEYING:

Chain surveying; compass surveying, plane table surveying; leveling and contouring, Minor instruments; Areas and Volumes; Theodolite surveying and traversing; Tachometry; Curve ranging; setting out works.
Principles and uses of triangulation, hydrographic surveying, Arial photogrammetry and photo interpretation, remote sensing and electromagnetic distance measurement.

6. GEOTECHNICAL ENGINEERING:

Physical properties of soils; identification and classification of soils; soil compaction; permeability and seepage; stress distribution in soil; consolidation; shear strength of soil; stability of earth slopes; site investigation and sub soil exploration; lateral earth pressure and retaining walls; bearing capacity and shallow foundations; pile foundations; well foundations; Machine foundations.

7. TRANSPORTATION ENGINEERING:

Highway Engineering; classification of roads; highway alignment and surveys; geometric design of highways; elements of traffic engineering; highway materials and testing; elements of pavement design; construction and maintenance of earth gravel, W.B.M., bituminous and concrete roads; highway drainage

Railway Engineering; engineering surveys for a new railway route, gauge and gauge problem; track components; ballast; sleepers; rail fastenings; Station and station yards; requirements and requirement for station yards; signaling and inter locking. Elements of cross drainage works; causeways; culverts; bridges

8. ENVIRONMENTAL ENGINEERING:

Water supply engineering; source of water supply, conveyance of water, distribution system; quality of water; treatment of water; filtration; disinfection; method of water treatment

Air pollutants – monitoring, quantification and standards

Charateristeristics of sewage: composition; B.O.D., C.O.D., aerobic and anaerobic decomposition; chemistry of sanitary sewage; sewage disposal; primary and secondary treatment of sewage; design of sewers

9. COMPUTER ENGINEERING

1. Hardware: Logic families, gates, flip-flops, Multiplexers, decoders, registers, counters, adder circuits, Boolean algebra, Combinational circuit design, minimization, sequential circuit design, number systems, inter conversion, number representation, computer organization, instruction formats, addressing modes, micro-programming, ALU organization, multiplication and division algorithms, memory hierarchy, cache and associate memories, virtual memory, memory IC's, I/O organization schemes, interrupts, arbitration, DMA, microprocessors, interfacing, pipeline, SIMD and MIMD organizations

2. Discrete Mathematics: Proposition and predicate logics, methods of deduction, set theory, relations, functions, algebraic structures, lattices, recursion, combinatorics, Graph theory: representation, Shortest paths, Warshall's algorithm, cyclic and bipartite graphs, Hamiltonian graph, chromatic number, trees, binary tree traversals, representation of expressions, breadth-first and depth-first algorithms, spanning trees, Prim's and Kruskal's algorithms.
3. Theory of Computation: Finite automata, pushdown automata, grammars: type 0, 1, 2, and 3, Turing machines.

4. Compilers: Lexical Analysis, LL and LR grammars, parsing, Flex, Bison

5. Programming: Flow-charts, programming methodologies, 'C', C++, Java.
6. Data Structures and Algorithms: Linked Lists, Stacks, Queues, Binary Search Trees, height balanced trees, AVL trees, Algorithms, searching and sorting methods, Algorithm Design paradigms: divide and conquer, dynamic programming, greedy.
7. DBMS: Database models, query languages, normalization and indexing
8. Operating systems: Process vs thread, CPU scheduling, memory allocation, paging and segmentation, synchronization, deadlocks and prevention, concurrent processing and file management.
9. Computer networks: OSI model vs TCP/IP model, Application layer protocols: HTTP, SMTP, FTP, Skype, Operation of TCP and UDP, IP routing, sunetting, IPv4/1Pv6, network routing algorithms, error control, TDMA/CDMA/FDMA/CSMA, ARQ mechanisms, Ethernet and Wi-Fi.

10. Computer graphics: DDA algorithms, graphic primitives, 2-D transformations, graphic input devices

11. AI techniques: Natural language processing, machine learning, knowledge representation, expert systems, LISP, PROLOG.

12. Software Engineering: Software engineering development life-cycle, system analysis, modular design, testing and validation, CASE tools

10. ELECTRONICS AND COMMUNICATION ENGINEERINg

Section 1: Networks, Signals and Systems

Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye-Delta transformation; Steady state sinusoidal analysis using phasors; Time domain analysis of simple linear circuits; Solution of network equations using Laplace transform; Frequency domain analysis of RLC circuits; Linear 2-port network parameters: driving point and transfer functions; State equations for networks.
Continuous-time signals: Fourier series and Fourier transform representations, sampling theorem and applications; Discrete-time signals: discrete-time Fourier transform (DTFT), DFT, FFT, Z-transform, interpolation of discrete-time signals; LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structure, frequency response, group delay, phase delay, digital filter design techniques.

Section 2: Electronic Devices

Energy bands in intrinsic and extrinsic silicon; Carrier transport: diffusion current, drift current, mobility and resistivity; Generation and recombination of carriers; Poisson and continuity equations; P-N junction, Zener diode, BJT, MOS capacitor, MOSFET, LED, photo diode and solar cell; Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography and twin-tub CMOS process.

Section 3: Analog Circuits

Small signal equivalent circuits of diodes, BJTs and MOSFETs; Simple diode circuits: clipping, clamping and rectifiers; Single-stage BJT and MOSFET amplifiers: biasing, bias stability, mid-frequency small signal analysis and frequency response; BJT and MOSFET amplifiers: multi-stage, differential, feedback, power and operational; Simple op-amp circuits; Active filters; Sinusoidal oscillators: criterion for oscillation, single-transistor and op-amp configurations; Function generators, wave-shaping circuits and 555 timers; Voltage reference circuits; Power supplies: ripple removal and regulation.

Section 4: Digital Circuits

Number systems; Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates and their static CMOS implementations, arithmetic circuits, code converters, multiplexers, decoders and PLAs; Sequential circuits: latches and flip-flops, counters, shift-registers and finite state machines; Data converters: sample and hold circuits, ADCs and DACs; Semiconductor memories: ROM, SRAM, DRAM; 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.

Section 5: Control Systems

Basic control system components; Feedback principle; Transfer function; Block diagram representation; Signal flow graph; Transient and steady-state analysis of LTI systems; Frequency response; Routh-Hurwitz and Nyquist stability criteria; Bode and root-locus plots; Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.

Section 6: Communications

Random processes: autocorrelation and power spectral density, properties of white noise, filtering of random signals through LTI systems; Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers, circuits for analog communications; Information theory: entropy, mutual information and channel capacity theorem; Digital communications: PCM, DPCM, digital modulation schemes, amplitude, phase and frequency shift keying (ASK, PSK, FSK), QAM, MAP and ML decoding, matched filter receiver, calculation of bandwidth, SNR and BER for digital modulation; Fundamentals of error correction, Hamming codes; Timing and frequency synchronization, inter-symbol interference and its mitigation; Basics of TDMA, FDMA and CDMA.

Section 7: Electromagnetics

Electrostatics; Maxwell's equations: differential and integral forms and their interpretation, boundary conditions, wave equation, Poynting vector; Plane waves and properties: reflection and refraction, polarization, phase and group velocity, propagation through

various media, skin depth; Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations; Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays; Basics of radar; Light propagation in optical fibers.

11. ELECTRICAL AND ELECTRONICS ENGINEERING

Section 1: Electric Circuits

Network graph, KCL, KVL, Node and Mesh analysis, Transient response of dc and ac networks, Sinusoidal steady-state analysis, Resonance, Passive filters, Ideal current and voltage sources, Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem, Two-port networks, Three phase circuits, Power and power factor in ac circuits.

Section 2: Electromagnetic Fields

Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Electric field and potential due to point, line, plane and spherical charge distributions, Effect of dielectric medium, Capacitance of simple configurations, Biot-Savart's law, Ampere's law, Curl, Faraday's law, Lorentz force, Inductance, Magnetomotive force, Reluctance, Magnetic circuits,Self and Mutual inductance of simple configurations.

Section 3: Signals and Systems

Representation of continuous and discrete-time signals, Shifting and scaling operations, Linear Time Invariant and Causal systems, Fourier series representation of continuous periodic signals, Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.

Section 4: Electrical Machines

Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three phase transformers: connections, parallel operation; Auto-transformer, Electromechanical energy conversion principles, DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, starting and speed control of do motors; Three phase induction motors: principle of operation, types, performance, torque-speed characteristics, no-load and blocked rotor tests, equivalent circuit, starting and speed control; Operating principle of single phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance, regulation and parallel operation of generators, starting of synchronous motor, characteristics; Types of losses and efficiency calculations of electric machines.

Section 5: Power Systems

Power generation concepts, ac and dc transmission concepts, Models and performance of transmission lines and cables, Series and shunt compensation, Electric field distribution and insulators, Distribution systems, Per-unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential and distance protection; Circuit breakers, System stability concepts, Equal area criterion.

Section 6: Control Systems

Mathematical modeling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady-state analysis of linear time invariant systems, Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci, Stability analysis, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, State transition matrix.

Section 7: Electrical and Electronic Measurements

Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.

Section 8: Analog and Digital Electronics

Characteristics of diodes, BJT, MOSFET; Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: Biasing, Equivalent circuit and Frequency response; Oscillators and Feedback amplifiers; Operational amplifiers: Characteristics and applications; Simple active filters, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters, 8085Microprocessor: Architecture, Programming and Interfacing.

Section 9: Power Electronics

Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor based converters, Bidirectional ac to dc voltage source converters, Issues of line current harmonics, Power factor, Distortion factor of ac to do converters, Single phase and three phase inverters, Sinusoidal pulse width modulation.

12. ELECTRONICS & INSTRUMENTATION ENGINEERING

1: Electrical Circuits:

Voltage and current sources: independent, dependent, ideal and practical; v-i relationships of resistor, inductor, mutual inductor and capacitor; transient analysis of RLC circuits with dc excitation.

Kirchoff's laws, mesh and nodal analysis, superposition, Thevenin, Norton, maximum power transfer and reciprocity theorems.

Peak-, average- and rms values of ac quantities; apparent-, active- and reactive powers; phasor analysis, impedance and admittance; series and parallel resonance, locus diagrams, realization of basic filters with R, L and C elements.

One-port and two-port networks, driving point impedance and admittance, open-, and short circuit parameters.

Section 2: Signals and Systems:

Periodic, aperiodic and impulse signals; Laplace, Fourier and z-transforms; transfer function, frequency response of first and second order linear time invariant systems, impulse response of systems; convolution, correlation. Discrete time system: impulse response, frequency response, pulse transfer function; DFT and FFT; basics of IIR and FIR filters.

Section 3: Control Systems:

Feedback principles, signal flow graphs, transient response, steady-state-errors, Bode plot, phase and gain margins, Routh and Nyquist criteria, root loci, design of lead, lag and lead-lag compensators, state-space representation of systems; time-delay systems; mechanical, hydraulic and pneumatic system components, synchro pair, servo and stepper motors, servo valves; on-off, P, P-I, P-I-D, cascade, feedforward, and ratio controllers.

Section 4: Analog Electronics:

Characteristics and applications of diode, Zener diode, BJT and MOSFET; small signal analysis of transistor circuits, feedback amplifiers. Characteristics of operational amplifiers; applications of opamps: difference amplifier, adder, subtractor, integrator, differentiator, instrumentation amplifier, precision rectifier, active filters and other circuits. Oscillators, signal generators, voltage controlled oscillators and phase locked loop.

Section 5: Digital Electronics:

Combinational logic circuits, minimization of Boolean functions. IC families: TTL and CMOS. Arithmetic circuits, comparators, Schmitt trigger, multi-vibrators, sequential circuits, flip-flops, shift registers, timers and counters; sample-and-hold circuit, multiplexer, analog-to-digital (successive approximation, integrating, flash and sigma-delta) and digital-to-analog converters (weighted R, R-2R ladder and current steering logic). Characteristics of ADC and DAC (resolution, quantization, significant bits, conversion/settling time); basics of number systems, 8-bit microprocessor and microcontroller: applications, memory and input-output interfacing; basics of data acquisition systems.

Section 6: Measurements:

SI units, systematic and random errors in measurement, expression of uncertainty accuracy and precision index, propagation of errors. PMMC, MI and dynamometer type instruments; dc potentiometer; bridges for measurement of R, L and C, Q-meter. Measurement of voltage, current and power in single and three phase circuits; ac and dc current probes; true rms meters, voltage and current scaling, instrument transformers, timer/counter, time, phase and frequency measurements, digital voltmeter, digital multimeter; oscilloscope, shielding and grounding.

Section 7: Sensors and Industrial Instrumentation:

Resistive-, capacitive-, inductive-, piezoelectric-, Hall effect sensors and associated signal conditioning circuits; transducers for industrial instrumentation: displacement (linear and angular), velocity, acceleration, force, torque, vibration, shock, pressure (including low pressure), flow (differential pressure, variable area, electromagnetic, ultrasonic, turbine and open channel flow meters) temperature (thermocouple, bolometer, RTD (3/4 wire), thermistor, pyrometer and semiconductor); liquid level, pH, conductivity and viscosity measurement.

Section 8: Communication and Optical Instrumentation:

Amplitude- and frequency modulation and demodulation; Shannon's sampling theorem, pulse code modulation; frequency and time division multiplexing, amplitude-, phase-, frequency-, pulse shift keying for digital modulation; optical sources and detectors: LED, laser, photo-diode, light dependent resistor and their characteristics; interferometer: applications in metrology; basics of fiber optic sensing.

13. ENGLISH

I. Movements and Concepts

Renaissance, Metaphysical poetry, Neo-classicism, Romanticism, Rise of the novel, Modernism, Postmodernism, Colonialism, Postcolonialsim, Diaspora, Psychoanalytical criticism, Myth and archetype, Feminism, Structuralism, Poststructuralism, Deconstruction.

II. Writers and Texts

1)	William Shakespeare	*Hamlet*, *Tempest*
2)	John Milton	*Paradise Lost*-Book 1 and 9
3)	William Wordsworth	"Immortality Ode", *Tintern Abbey*
4)	John Keats	"Ode to a Nightingale", "To Autumn"
5)	Robert Browning	"My Last Duchess", "The Last Ride Together"
6)	**Charles Dickens**	***David Copperfield***
7)	**TS Eliot**	**"The Waste Land", *Murder in the Cathedral***
8)	**GB Shaw**	***Saint Joan***
9)	**Virginia Woolf**	**"A Room of One's Own"**
10)	**Samuel Beckett**	***Waiting for Godot***
11)	**William Golding**	***Lord of the Flies***
12)	**Robert Frost**	**"Home Burial", "The Road Not Taken"**
13)	**Eugene O'Neill**	***The Hairy Ape***
14)	**Toni Morrison**	***Beloved***
15)	**Mulk Raj Anand**	***Untouchable***
16)	**AK Ramanujan**	"Love Poem for a Wife", "Small-Scale Reflections on a Great House"
17)	**Girish Karnad**	***Hayavadana***
18)	**Salman Rushdie**	***Midnight's Children***
19)	**Chinua Achebe**	***Things Fall Apart***
20)	**Margaret Atwood**	***Edible Woman***
21)	**AD Hope**	**"Australia", "Crossing the Frontier"**
22)	**Bessie Head**	*A Question of Power*

III. English Language Teaching

1) ELT in India: (History and status of English in India; English as Second Language, English as Foreign Language, and Ensglish as Global Language).

2) Methods and Approaches: (Grammar Translation method, Direct method, Audio-Lingual method; Structural approach, Communicative language teaching)

3) Teaching of Language Skills: (Teaching of Listening, Speaking, Reading, and Writing Skills; Teaching of Grammar and Functional English; Teaching of Vocabulary; Classroom techniques; Use of authentic materials)

4) Testing and Evaluation: (Principles, Types, Objectives of testing and evaluation)

5) Phonetics and Phonology; Syntax and Structure.

14. GARMENT TECHNOLOGY

Indian Embroidery, Indian Jewellery, Traditional Indian textiles

Embroidery of Kashmir, Sindh, Gujarat, Punjab, Haryana, Himachal pradesh, Bengal, Bihar, Uttar pradesh, Karnataka, Rajasthan, Orissa, Tamilnadu, Gold and Silver embroidery etc

Indian Jewellery – techniques in jewellery work, traditional ornaments-nose ornaments, foot ornaments, head ornaments, girdles, belts, armlets, neck ornaments, bangles etc

Traditional Indian textiles-Kalamkari, Pochampally, Paithani, Patola, Baluchari, anaras brocades, Pabuji Par etc

DYEING AND PRINTING

Bleaching of Cotton, Wool, Silk , man - made fibers Scouring, Singing, desizing Chemical constitution and colour Classification and types of dyes Machinery used in dyeing Methods and styles of printing

Dyeing and printing of cotton, wool, silk, polyester, acrylic, and other synthetic fibers Chemistry of dyestuff intermediates.

Pollution control- air pollution, water pollution, treatment of effluent water, disposal of solid waste.

TEXTILE SCIENCE

Manufacture and properties of – cotton silk, wool polyester, nylon, acrylic, modacrylic, viscose rayon, cuprammonium rayon, cellouse acetate rayon, polypropylene, glass

Yarns – types, count, systems, measurement Ecology and textiles – eco standards , textile process chemicals, toxicological considerations

Textile testing- identification of fibers stain tests solubility tests, fiber analysis, testing of fibers- fiber length, fiber fineness, twist, yarn strength, lea strength, etc., fabric testing – strength, abrasion resistance, air and water permeability, skew ness, etc

Weaving – Yarn calculations, weaving calculations Preparations for weaving, types of looms different types of weaves etc.,

Knitting, Braiding, Lace, felt, etc., methods of making fabric Wet spinning, melt spinning, and dry spinning Texturizing Finishes – ammoniating mercerizing shrinking, stiffening, weighting, calendaring, glazing, schreinerizing, embossing, moireing, cireing, beetling, raising, napping, wrinkle, resistant finishes, soil repellent finishes, flame retardant finishes, mildew proof finishes etc., Detergents – fats and oils, surfactants and surface activity, soap manufacture, synthetic detergents, analysis of detergents Textile terminology.

CLOTHING

Basic stitches – rentering stitch, hemming, back stitch, quick overcastting, overcasting, deeper over casting, over handling, stoating stich etc.,

Seams and seam finishes – plain, welt, flat fell, strap, slot, French, upholsterer's, corded, lapped, imitation French , laced seams, top stitch seam, etc.,

Working of embroidery stitches

Methods of handling finishes – Casing, gathers, shirring, smocking, tucks, pleats, godets, darts, etc.,

Neck line finishes – combination facings ,applying shaped facings to neckline with zipper, applying shaped facing to neckline and garment opening , applying bias facing , applying cording to faced neck line ,application of single and double layer binding ,decorative facings etc Drafting and stitching of sleeves – cap sleeve , basic Bishop sleeve ,exaggerated Bishop sleeve, Bell sleeve , puff sleeve , petal sleeve , lantern sleeve ,cowl sleeve , wedding sleeve , Kimono sleeve ,Dolmon sleeve ,Raglon sleeve etc

Drafting and stitching of collars – shirt collar, shawl collar, mandarin collar, turtle neck collar, sailor collar ,puritan collar ,etc

Drafting and stitching of pockets – patch, bound, in seam pockets etc Drafting and stitching of yokes Drafting and stitching of skirts Underlying fabrics – linings , inter linings, interfacings , underlying (selection ,types , applications etc)

preparation of material for cutting – preparation of woven and knitted fabrics for cutting Handling of fabrics – velvet, velveteen, bonded, stretch, knit, lace, wash and wear, silk, laminated , napped, leather, jersey sheer fabrics etc

(selection of pattern, shrinking, cutting , marking, selection of inter facing , basting, selection of thread and needle , stitch length , seam finishes , button holes , hems , linings , pressing etc) Pattern alterations – alterations to trousers , skirts , blouse , alterations based on figure irregularities etc

Care of fabrics – darning and patching , washing of different fabrics , dry cleaning – types of equipment used in dry cleaning , methods of dry cleaning , pressing of garments ,pressing equipments etc. Dart manipulation.

APPAREL MANUFACTURING , MARKETING AND MERCHANDISING

Cutting , production analysis – types of spreads , spreading equipment and tools , spreading methods analysis , cutting equipment , cutting methods analysis , types of marker and spreading materials , cost and quality principles governing markers , training cutting production personnel etc

Fabric grading – grey state fabric grading, conventional system of grading, point system of grading , finished fabric grading

Defects –spinning defects , sizing defects , warp defects , filling defects , other weaving defects , bleaching and finishing defects , dyeing defects , printing defects , stains etc Machinery used in apparel industry

Time and motion study Quality control Production systems Pricing strategies Marketing ethics Product services Marketing environment

FASHION DESIGNING

Principles of designing Elements of design Colour theory Selection of apparel
Selection of accessories Classification of fashion Fashion terminology Selection of fabric design Illusion in designing. Works of Indian and international designer's Western fashions.
Fashion trends in different periods Display of garments.

15. GEOLOGY

1. Geomorphology and Remote Sensing

Basic principles, weathering and soils, mass wasting, influence of climate on processes. Concept of erosion cycles. Geomorphology of fluvial tracts, arid zones, coastal regions, karst landscapes and glaciated ranges. Applications of Geomorphology in mineral prospecting, civil engineering, hydrology and environmental studies, topographical maps and geomorphology of India.

Concepts and principles of aerial photography and photogrammetry Satellite Remote Sensing. Fundamentals of Digital Image Processing. Use of Remote Sensing in landforms, landuse, and structural mapping, Hydrogeological studies and mineral exploration. Geographic Information System (GIS) – principles and applications.

2. Structural geology and Geotectonics

Principles of geological mapping and map reading, projection diagrams, stress-strain relationship of elastic, plastic and viscous materials. Behavior of minerals and rocks under deformation conditions. Structural analysis of folds, cleavages, lineation's, joints, and faults. Superposed deformation. Mechanism of folding and faulting. Unconformities and basement cover relations. Structural behavior of igneous rocks, diapirs and salt domes. Fundamentals of petrofabric analysis.

Earth and solar system. Planetary evolution of earth and its internal structure. Heterogeneity of the earth's crust. Major tectonic features of the oceanic and continental crust. Continental drift-geological, geophysical and other evidences, mechanics, objections and present status. Gravity and magnetic anamolies at mid oceanic ridges, deep sea trenches, continental shield areas and mountain chains. Paleomagnetism, seafloor spreading and plate tectonics, Island arcs, oceanic islands and volcanic arcs, isostacy, orogeny, epeirogeny, geosynclines, and seismic belts of the earth. Seismicity and plate movements. Geodynamics of the Indian plate.

3.Stratigraphy

Nomenclature and the modern stratigraphic code. Radio isotopes and measuring geological time. Geological time scale, stratigraphic procedures of correlation of unfossiliferous rocks. Precambrian stratigraphy of India. Stratigraphy of the Paleozoic and Mesozoic and Cenozoic formations of India. Gondwana system and gondwana land, and origin of Himalaya and evolution of Siwalik basin, Deccan volcanic. Quaternary stratigraphy, rock record, paleoclimates and paleogeography.

4. Paleontology

Fossil records, morphology and time ranges fossil groups. Evolutionary changes in Mollusks and mammals in geological time. Principles of evolution. Use of species and genera of foraminifera and echinodermata in biostratigraphic correlation. Siwalik vertebrate fauna and flora, different microfossil groups and their distribution in India.

5. Crystallography and Mineralogy

Physical, chemical and crystallographic characteristic of common rock forming mineral group. Silicate structures. Common minerals of igneous and metamorphic rocks. Minerals of the carbonate, phosphate, sulphide, halide and oxide groups.

Optical properties of common rock forming silicate minerals, uniaxial and biaxial minerals. Extinction, plechroism, birefringence of mineral and their relation with mineral composition. Twinned crystals and dispersion of optic axis and crystallographic axis.

6. Igneous and Metamorphic petrology

Forms, textures, and structures of igneous rocks, silicate melt equilibria, binary and ternary phase diagrams, Petrology and geotectonic evolution of granites, basalts, andesites and alkaline rocks. Petrology of gabbros, kimberlites, anorthosites and carbonatites. Origin and evolution of magmas.

Textures and structures of metamorphic rocks. Regional and contact metamorphism of pelitic and impure calcareous rocks. Mineral assemblages and P/T condition.

Characteristics of different grades and facies of metamorphism, Metasomatism and granitization, magmatites. Plate tectonics and metamorphic zones. Paired metamorphic belts.

7. Sedimentology

Provenance and digenesis of sediments, Sedimentary textures. Framework matrix and cement of terrigenous sediments. Definition, measurement and interpretation of grain size. Elements of hydraulics, primary structure, paleocurrent analysis. Biogenic and chemical sedimentary structures. Sedimentary environment and facies. Facies modeling for marine, non marine and mixed sediments. Tectonics and sedimentation. Classification and definition of sedimentary basins, sedimentary basins of India. Cycle sediments. Seismic and sequence stratigraphy. Purpose and scope of basin analysis. Structure contours and isopach maps.

8. Geochemistry

Earth in relation to the solar system and universe, cosmic abundance of elements. Composition of the planets and meteorites. Structure and composition of earth and distribution of elements. Trace elements. Elementary crystal chemistry and thermodynamics. Introduction to isotope geochemistry. Geochemistry of hydrosphere, biosphere and atmosphere. Geochemical cycle and principles of geochemical prospecting. Origin of elements.

9. Environmental geology

Concepts and principles. Natural hazards, preventive/precautionary measures-floods, landsides, earthquakes, rivers and coastal erosion. Impact assessment of anthropogenic activities such as urbanization, open-cast mining and quarrying, river-valley projects, disposal of industrial radioactive waste. Excess withdrawl of groundwater, use of fertilizers, dumping of ores, mine waste and flyash. Organic and inorganic contamination of groundwater and their remedial measures. Soil degradation and remedial methods. Environmental protection-legislative measures in India. Factors for groundwater subsidence.

10.Indian mineral deposits and mineral economics

Occurrence and distribution of metalliferous deposits-base metals, iron, manganese, alluminium, platinum, chromium, nickel, gold, silver, molybdenum. Indian deposits of non metals-mica, asbestos, barite, gypsum, apatite and beryl. Phosphrite, placer and rare earth mineral deposits. Gemstones, raw materials used for refractories, abrasives, glass, fertilizers, paints, ceramics and cement industries.

Stragetic, critical and essential minerals. Indias status in mineral production. Change in pattern of mineral consumption, National Mineral Policy. Mineral concession rules, Marine mineral resources and law of sea. Conservation and substitution of minerals.

11. Ore genesis

Ore deposits and ore minerals. Magmatic processes of mineralization, porphyry, skarn, and hydrothermal mineralization. Fluid inclusion studies and paragenesis. Mineralization associated with – i. ultramafic, mafic and acid rocks, ii. Greenstone belts, iii. Komatites, anorthosites and kimberlites, iv, Submarine volcanism-volcanogenic deposits. Magma-related mineralization through geological time. Stratiform and stratabound ores. Syngenetic deposits, residual and mechanical concentration processes, supergene sulphide and oxide enrichments.

12. Mineral exploration

Methods of surface and subsurface exploration, prospecting for economic minerals and fuels-drilling, sampling, and assaying. Geophysical techniques – gravity, electrical, magnetic, air borne, and seismic. Instrumental techniques of detection and measurement of radio activity. Radio active methods for prospecting and assaying of mineral deposits. Geomorphological and remote sensing techniques. Geobotanical and geochemical methods. Bore hole logging and survey for deviation.

13. Fuels

Definition, origin of coal, stratigraphy of coal measures. Fundamentals of coal petrology, peat, lignite, bituminous and anthracite. Industrial application of coal. Indian coal deposits.

Origin, accumulation, migration and entrapment of natural hydrocarbons. Characters of reservoir rocks. Structural, stratigraphic and mixed traps. Geographical and geological distribution of petroliferous basins of India. Gas hydrates and Coal Bed Methane occurrences.

Mineralogy and geochemistry of radioactive minerals. Distribution of radio active minerals in India. Radio active methods in petroleum exploration-well logging techniques. Nuclear waste disposal-geological constraints.

14. Engineering geology

Mechanical properties of rocks and soils. Geological investigations for river-valley projects-dams and reservoirs; tunnels-type, methods and problems. Bridges-types and foundation problems. Shoreline engineering, landslides, classification, causes, prevention and rehabilitation. Earthquake resistant structures. Problems of groundwater in engineering projects. Geotechnical case studies of major projects in India.

15. Hydrogeology

Origin of water-meteoric, juvenile, and connate. Hydrological cycle-evaporation, precipitation, runoff. Hydrographs, water table contour maps. Rock properties affecting groundwater. Types of aquifers. Porosity, permeability, specific yield and retention, hydraulic conductivity, trasmitssivity, storage and storage coefficient.

Well hydraulics, general flow equations, study of unidirectional flow, radial flow to a well, unsteady radial flow in a confined and unconfined aquifer. Water level fluctuation and causative factors. Methods of pumping tests and analyses, evaluation of aquifer parameters. Artificial recharge of groundwater. Groundwater legislation. Sustainability criteria and managing renewable and non-renewable groundwater resources.

Groundwater quality-sources of salinity, estimation of major elements, interpretation of chemical analyses. Groundwater pollution, arsenic and fluoride problems. Groundwater quality maps of India. Quality criteria for groundwater use. Salt water intrusion in coastal aquifers and remedial methods.

Surface geophysical methods-seismic, gravity, geoelectrical and magnetic. Subsurface geophysical methods-well logging for delineation of aquifers and estimation of water quality.

16. MARINE ENGINEERING

1. **Mechanics of Solids:** Static all indeterminate Beams - Fixed and Continuousbeams, Analysis B.M. and S.F. diagrams. Columns and Struts, Stresses due to rotation. Thick and Thin cylinders, The oriesof failure, Torsional stress esinshafts.
2. **Theory of Ships:**Ship related terms and their definitions, Stability of ships and freeboard, Trim and effects of changes in draught. Sub division of ships, Launching types, General layout of ships, Ship structure, Accommodation in ships, Classification Societies, Life saving appliances and Navigational aids, Tonnage measurement, Marine pollution.

Ship Design : Design Methods, Estimation of Weight and Volume Components, Design of Hull Form Determination of Engine Power and Selection of Main and Auxiliary machinery, design consideration for special ships and use of computers, changes effect edoverthe years, Design features of special types of ships, Role of International andNational regulatory Bodies.

3. **Ship Structures :** ship structures, functions and analysis, Longitudinal strength, Ultimate strength and Transverse strength of hull girder, ship hull material, Strength of bulk heads, decks and tank tops, foundations, super structure, deck houses and structural discontinuities, Theory of thin plates, buckling of structures, composite construction, grillage analysis,calculationof scantlings.

4. **Marine Machinery:** Marine and Special Duty pumps, Ejectors, Strainers and Filters, Coolers, Centrifuges, Purifiers and clarifiers-their purpose, construction and operation, Marine Piping, evaporators, distillers, valves and fittings, pipes materials and corrosion, color codes for different pipes, Deck equipments, Hull fittings, Anchors and Mooring gear .Ship transmission system, Stern tubes and glands-oil lubricated stern tubes, shaft seals, shaft alignment, thrust block, reduction gearing.

5. **Ship Resistance and Propulsion:** Resistance types, estimation of to talresistance and effective horsepower, Propeller Design and hull propeller interaction, prediction of ship's power and strength of propellers, Classification of Power Plants, Construction, Operation and maintenance of Marine boilers, Steam engines, Marine Steam turbines, Marine IC Engines, Marine Gas turbines, hydro - electric, Nuclear and Solar powerpropulsion and their combinations, FuelConsumptionunder varyingconditions,.

6. **Ship Systems:** Operation and Maintenance of Marine Refrigeration and Air Conditioning, temperature and humidity control-comfort conditioning, Cabin and cargo ventilation-piping and ducting-insulating materials, liquid cargo handling in tankers, cargo pipe layout systems- loading, unloading, ventilation, cleaning, Fire fighting systems-fixed and portable, ship electrical systems, Fuel and lubricating oil systems, Fresh water and sea water systems, communication systems, waste heat recovery systems, Hot water, drinking water, Bilge and Ballast systems-sewage disposal system.
7. **Ship Construction:** Ship building materials, Ship yard layout, Various departments and works hop sina shipyard, facilities and services, Surface preparation, Joining methods of materials, non-destructive testing, ship construction stages, launching, dock and sea trials, hull protection methods, Floating Docks, Bollard tests, Out fitting.
8. **Sea Keeping And Manoeuverability:** Sea keeping, Ship motion sin regular waves, Ship Motion sin Irregular waves, Dynamic effects, Roll and Pitch stabilization methods,

Introduction to Maneuverability, Control Surfaces, Steering gear stypes-construction, operation and maintenance, automation of ship systems and ship operation.

9. **Ship Vibration:** Hull Vibration and Pro pellerexciting forces, Types of damping, Special local vibration problems–Rudder vibration, cavitations, stress and vibration levels, General methods of reducing vibrations, Devices for reducing main hull vibration, Synchronizing devices fort win–screw ships, rotating weight neutralizers, Kurt nozzles.

17. Mathematics

1. Real Analysis

- Countable and uncountable sets — Real number system—lub and *glb* of a subset of real line.
- Cauchy, monotone and convergent sequences — subsequences — BolzanoWeierstrass theorem.
- Tests of convergence of infinite series.
- Continuous and uniform continuous functions — Intermediate value theorems.
- Differentiable functions — Mean value theorems.
- Riemann integrable functions.
- Sequence and series of functions.
- Metric spaces — completeness, compactness and connectedness. —Heine Borel theorem.

2. Complex Analysis

- Algebra of complex numbers — complex plane
- Analytic functions — Cauchy-Riemann equations
- Fractional linear transformation — Mobius transformation.
- Harmonic functions — Mean value property — Maximum principle.
- Complex integration — Cauchy theorem
- Cauchy integral formula — Liovelle's and Morera's theorem
- Power series — radius of convergence — manipulation.
- Taylor and Laurent series.
- Calculus of residues

3. Linear Algebra

- Vector spaces — subspaces — Quotient space
- Linear dependence and independence — basis — dimension.
- Inner product space — orthogonal basis Gram Schmidt process.
- Linear transformation — rank nullity theorem — matrix of a linear transformation with respect to a basis — change of basis.
- Singular and non singular matrix — inverse of a matrix.
- Eigen value and eigen vectors — characteristic polynomial — Cayley-Hamilton theorem
- D iagonalizat ion

4. Algebra

- Groups, subgroups, normal subgroups — Lagrange's theorem
- Quotient groups — homomorphism and isomorphism theorems.
- Permutation grOups, cyclic groups
- Cayley's theorem, Sylow's theorem and applications.
- Rings, subrings, — quotient rings — homomorphism and isomophisms
- integral domains, fields
- Ideals, prime ideals, maximal ideals
- Polynomial rings — irreducible polynomials
- Euclidean domain, principle ideal domains

5. Differential equation

- First order linear ordinary differential equations (ODE) — solutions — Exact differential equations and integrating factors.

- First order non-linear equations — solutions — singular solutions.
- Second order linear equations — solutions — Wronskian — variation of parameters.
- Linear higher order equations with constant coefficients and specific variable coefficients
- Formation of partial differential equation (PDE) — geometry of solution — types of solution
- Cauchy problem for first order PDE — characteristic curves
- Compatible systems, Lagrange and Charpit method of solving first order PDE.
- Classification of second order PDEs. Examples of three types.

18. MECHANICAL ENGINEERING

Fluid Mechanics

Fluid properties— density, viscosity, surface tension; Fluid Statics— Hydrostatics, Fluid forces on planes and curved surfaces, submerged and floating bodies, Buoyancy and stability, Fluid Concepts —Streamlines, streaklines, pathlines, viscous vs inviscid flows, laminar vs turbulent flows, compressible v/s incompressible flows; Bernoulli equation; Control Volume analysis: Basic laws — Mass conservation law, thermodynamic laws, Newton's laws, Angular-Momentum principle; Flows in a pipes and channels - friction factor, flow measurement devices — Venturi meter, Orifice meter. Governing equations of fluid flows— continuity, Euler equations, Navier-Stokes equations, internal flows; external flows, Flow separation;

Thermodynamics

Thermodynamic system and control volume, properties and state of a substance, process and cycles, energy, pressure and temperature, Zeroth law, Properties of pure substance, work and heat, First law of thermodynamics, first law analysis for a control volume, Second law of thermodynamics, Entropy, Second law analysis for a control volume, irreversibility and availability, power and refrigeration cycles —Carnot cycle, Brayton cycle, Diesel cycle, Otto cycle, Stirling cycle, Rankine cycle, vapour compression refrigeration cycle and their variants

Material Science

Crystal geometry and structure determination, structure of solids, crystal imperfections, Phase diagram, diffusion in solids, phase transformations, elastic anelastic and visco-elastic behaviour, phase deformation and creep in crystalline materials, fracture, conductors, resistors, semi-conductors, magnetic materials, dielectric materials

Engineering Mechanics and Strength of Materials

Definition for rigid body, statics, dynamics (kinematics and kinetics); Idealization in mechanics; Vector operations; Resultant of system of coplanar forces (parallelogram and triangular construction); Free body· diagram; Resolution of forces in 3D; Equilibrium equation; Shear Force and Bending Moment Diagram; Analysis of trusses — Method of joints and Method of sections; stability of trusses; space trusses; Mass and Geometric properties of members — Centre of gravity and moment of inertia for simple geometries; Parallel and Perpendicular — axes theorem; Kinematics and dynamics of rigid bodies; Virtual work done; Energy method for particles. Tension, compression and shear stresses, axially loaded members, torsion, beam bending, transverse shear, combined loading, and impact loading, deflections of beams, energy methods, analysis of stress and strain, stress transformation, applications of plane stress, pressure vessel, column buckling, and statically indeterminate structures.

Manufacturing Processes

Methods of manufacturing with metals — Basic Principles, Processes, equipment, process variables: Casting - Fundamentals, various types of casting processes; Forming — Rolling, Forging, Extrusion and Drawing, Sheet Metal Forming; Joining — Welding, Brazing, Soldering, Bonding and Mechanical Fastening; Non-Traditional Manufacturing - Thermo-mechanical Processes, Thermo-electrical Processes, Chemical Processes, Thermo-chemical Processes, Hybrid Processes

Applied Thermodynamics

IC Engines - Classification, Basic Working Principles, Components and Engine Operating Events of an IC Engine; Engine Operating Parameters: Geometry, Torque, Power and Work; Fuel Consumption and Efficiencies; SI and CI Engine Cycle Models: Basic Thermodynamic and Thermo-chemistry Analysis
Turbo-machine: Basic Principles, Two-dimensional cascades, Thermodynamic analysis of axial flow turbines, axial flow compressors, centrifugal pumps, compressors and hydraulic turbines

Boilers and Condensers: Fire-tube boiler, Water tube boiler, high pressure boilers, boiler draught and performance; types of condensers, jet condenser, surface condenser, condenser efficiency, cooling tower and pond

Reciprocating Air Compressor: Compressed air systems, reciprocating air compressor, thermodynamic analysis, efficiency, free air delivery

Heat Transfer and Refrigeration

Modes of heat transfer, heat conduction — 10 steady state, 10 transient, fins; convective heat transfer — natural and forced convection, convective heat transfer corelations, condensation and boiling, heat exchangers — LMTD and NTU methods. Vapour compression refrigeration systems, types of refrigerants, components in a refrigeration systems — pumps, condensers, expansion devices, evaporators; gas cycle refrigeration, vapour absorption system.

Machine Design

Design consideration-limits, fits, tolerances and standardization, modes of failure, failure theories. Design of shafts under static and fatigue loadings. Design of springs - helical, compression, tension, torsional and leaf springs. Design of joints — threaded fasteners, preloaded bolt joints, welded and glued joints. Design and analysis of sliding and rolling contact bearings. Analysis and applications of power screws and couplings. Analysis of clutches and brakes. Design of belt and chain drives. Design of spur, helical, bevel and worm gears.

Machine Drawing and Solid Modelling

Principle of drawing. Introduction to machine drawing, production drawing, assembly drawing. Different sectional views. Fits, limits, tolerances and surface finish. Solid modelling of different machine elements. Example, threads, bolts, and nuts, welded and riveted joints, shafts, keys, cotter, and pin joints; couplings and clutches, springs, belts, and pulleys; bearings, gears. Assembly of different components of IC engine

Theory of Machines

Introduction to mechanisms, Links, Kinematic pairs, Kinematic chains, Mechanism and Inversions, Kennedy's theorem, Velocity and acceleration in mechanism, Relative velocity methods, Instantaneous center of rotation, Acceleration diagram, Acceleration center. Cams: Synthesis of translating flat-face, translating roller and oscillating roller follower cams. Gears: terminology, fundamental law of gearing, involute profile, Interference and undercutting, minimum number of teeth, contact ratio, bevel helical, spiral and worm gears, Gear Trains —simple, compound and epicyclic gear trains; sliding gear boxes and synchronous gear boxes.

Production Engineering

Principles of Metal cutting: orthogonal and oblique cutting; mechanics of machining; Machine Tools turning, milling, shaping, drilling: Construction and working; Process variables; Cutting tools —nomenclature, material and tool life; Machinability ; Abrasive machining processes- grinding, honing, lapping, burnishing and super finishing: Equipment, process variables and surface features; Surface integrity concepts. Introduction to NC and CNC: Concepts and programming — Constructional features of various machine tools; Introduction to computer integrated manufacturing.

Metrology : Fundamentals of measurements: Errors, Length Standards, Gauging, Comparators, limits & Fits and Tolerances; Role of metrology in quality assurance; Measurement of geometric forms , Flatness, Straightness, form errors; Slip gauges; Surface finish measurements; Coordinate measuring machines; Vision applications in Metrology; Optical metrology and laser interferometry; Nano measurements

industrial Engineering

Management functions, Evolution of Management Theory, Management approach to Planning, Analysis and Control functions involved in a Production System; Production cycles, planning functions; Types of industry : Job, Batch, Continuous, Mass and Flow Productions; Organisation and policies in respect of production planning and control; Product design and development; Forecasting techniques; Scheduling, Sequencing and plant loading for optimal utilization; Queueing models and line balancing; Materials Planning and Control, Inventory Management; Value Analysis; Productivity Analysis, Mechanics of production control.

19. METALLURGICAL ENGINEERING

Section 1: Thermodynamics and Rate Processes

Laws of thermodynamics, activity, equilibrium constant, applications to metallurgical systems, solutions, phase equilibria, Ellingham and phase stability diagrams, thermodynamics of surfaces, interfaces and defects, adsorption and segregation; basic kinetic laws, order of reactions, rate constants and rate limiting steps; principles of electro chemistry- single electrode potential, electrochemical cells and polarizations, aqueous corrosion and protection of metals, galvanic corrosion, crevice

corrosion, pitting corrosion, intergranular corrosion, selective leaching, oxidation and high temperature corrosion - characterization and control; heat transfer - conduction, convection and heat transfer coefficient relations, radiation, mass transfer - diffusion and Fick's laws, mass transfer coefficients; momentum transfer - concepts of viscosity, shell balances, Bernoulli's equation, friction factors.

Section 2: Extractive Metallurgy

Minerals of economic importance, comminution techniques, size classification, flotation, gravity and other methods of mineral processing; agglomeration, pyro-, hydro-, and electro-metallurgical processes; material and energy balances; principles and processes for the extraction of non-ferrous metals - aluminium, copper, zinc, lead, magnesium, nickel, titanium and other rare metals; iron and steel making - principles, role structure and properties of slags, metallurgical coke, blast furnace, direct reduction processes, primary and secondary steel making, ladle metallurgy operations including deoxidation, desulphurization, sulphide shape control, inert gas rinsing and vacuum reactors; secondary refining processes including AOD, VAD, VOD, VAR and ESR; ingot and continuous casting; stainless steel making, furnaces and refractories.

Section 3: Physical Metallurgy

Crystal structure and bonding characteristics of metals, alloys, ceramics and polymers, structure of surfaces and interfaces, nano-crystalline and amorphous structures; solid solutions; solidification; phase transformation and binary phase diagrams; principles of heat treatment of steels, cast iron and aluminium alloys; surface treatments; recovery, recrystallization and grain growth; structure and properties of industrially important ferrous and non-ferrous alloys; elements of X-ray and electron diffraction; principles of optical, scanning and transmission electron microscopy; industrial ceramics, polymers and composites; introduction to electronic basis of thermal, optical, electrical and magnetic properties of materials; introduction to electronic and opto-electronic materials.

Section 4: Mechanical Metallurgy

Elasticity, yield criteria and plasticity; defects in crystals; elements of dislocation theory - types of dislocations, slip and twinning, source and multiplication of dislocations, stress fields around dislocations, partial dislocations, dislocation interactions and reactions; strengthening mechanisms; tensile, fatigue and creep behaviour; superplasticity; fracture - Griffith theory, basic concepts of linear elastic and elastoplastic fracture mechanics, ductile to brittle transition, fracture toughness; failure analysis; mechanical testing - tension, compression, torsion, hardness, impact, creep, fatigue, fracture toughness and formability.

Section 5: Manufacturing Processes

Metal casting - patterns and moulds including mould design involving feeding, gating and risering, melting, casting practices in sand casting, permanent mould casting, investment casting and shell moulding, casting defects and repair; Hot, warm and cold working of metals; Metal forming - fundamentals of metal forming processes of rolling, forging, extrusion, wire drawing and sheet metal forming, defects in forming; Metal joining - soldering, brazing and welding, common welding processes of shielded metal arc welding, gas metal arc welding, gas tungsten arc welding and submerged arc welding; Welding metallurgy, problems associated with welding of steels and aluminium alloys, defects in welded joints; Powder metallurgy - production of powders, compaction and sintering; NDT using dye-penetrant, ultrasonic, radiography, eddy current, acoustic emission and magnetic particle methods.

20. MINING ENGINEERING

Section 1: Mine Development and Surveying

Mine Development: Methods of access to deposits; Underground drivages; Drilling methods and machines; Explosives, blasting devices and practices.

Mine Surveying: Levels and leveling, theodolite, tacheometry, triangulation; Contouring; Errors and adjustments; Correlation; Underground surveying; Curves;

Photogrammetry; Field astronomy; EDM and Total Station; Introductory GPS .

Section 2: Geomechanics and Ground Control

Engineering Mechanics: Equivalent force systems; Equations of equilibrium; Two dimensional frames and trusses; Free body diagrams; Friction forces; Particle kinematics and dynamics; Beam analysis.

Geomechanics: Geo-technical properties of rocks; Rock mass classification; Instrumentation and stress measurement techniques; Theories of rock failure; Ground vibrations; Stress distribution around mine openings; Subsidence; Rock bursts and coal bumps; Slope stability.

Ground Control: Design of pillars; Roof supporting systems; Mine filling.

Section 3: Mining Methods and Machinery

Mining Methods: Surface mining: layout, development, loading, transportation and mechanization, continuous surface mining systems; Underground coal mining: bord and pillar systems, room and pillar mining, longwall mining, thick seam mining methods; highwall mining; Underground metal mining: open, supported and caved stoping methods, stope mechanization, ore handling systems.

Mining Machinery: Generation and transmission of mechanical, hydraulic and pneumatic power; Materials handling: haulages, conveyors, face and development machinery, hoisting systems, pumps, crushers.

Section 4: Surface Environment, Mine Ventilation, and Underground Hazards

Surface Environment: Air, water and soil pollution : Standards of quality, causes and dispersion of contamination, and control; Noise; Land reclamation.

Mine Ventilation: Underground atmosphere; Heat load sources and thermal environment, air cooling; Mechanics of air flow, distribution, natural and mechanical ventilation; Mine fans and their usage; Auxiliary ventilation; Ventilation planning; Ventilation networks.

Subsurface Hazards: Mine Gases. Underground hazards from fires, explosions, dust and inundation; Rescue apparatus and practices; Safety in mines; Accident data analysis; Mine lighting; Mine legislation; Occupational safety.

Section 5: Mine Economics, Mine Planning, Systems Engineering

Mine Economics: Mineral resource classification; Discounted cash flow analysis; Mine valuation; Mine investment analysis; Mineral taxation.

Mine Planning: Sampling methods, practices and interpretation; Reserve estimation techniques: Basics of geostatistics and quality control; Optimization of facility location; Work-study.

Systems Engineering: Concepts of reliability; Reliability of simple systems; Maintainability and availability; Linear programming, transportation and assignment problems; Network analysis; Inventory models; Queueing theory; Basics of simulation.

21. PHARMACY

PHARMACEUTICS

- History of Pharmacy: Development of Pharmacy education
- Pharmacy literature : History and Development of IP., BP., USP, BPC, NF OF INDIA and extra Pharmacopoeia.
- History of Ayurveda.
- Principles of dispensing- Prescription handling, pricing and refilling of Prescription, containers, labelling and packing.
- Posology : Definition, factors influencing doses, calculation of doses.
- Unit Operations: Size Reduction, Size Seperation, Mixing, Evaporation, Distilllation, Extraction, Drying, Sterilization, Filteration, crystallization, centrifugation, Dehumidification and humidity control

- Principles Involved and procedures adopted in the preparation and dispensing of the following classes of pharmaceutical preparations solid, liquid, semisolid, parenteral dosage forms and Aerosols.
- Incompatability: Physical, chemical and therapeutic incompatabilities, methods of overcoming and handling of incompatible prescriptions.
- Cosmetic preparations : General aspects of face , hands ,body , hair , dental , shaving preparations
- Novel Drug Delivery Systems : Oral, Transdermal, Mucoadhesive and Targeted drug delivery systems.
- General principles of immunology, serology and their applications.

PHARMACEUTICAL CHEMISTRY

- Sources of impurities in pharmaceutical substances, Limit tests for chloride ,sulphate arsenic, lead ,iron. Qualitative tests for anions and cations .
- Systematic study of the following pharmaceutical inorganic and organic compounds with reference to their preparations , properties , test for identity, purity , pharmaceutical uses and assay methods.

INORGANIC

- Electrolytes: sodium and potassium replenishers , calcium replenishers; acid base regulators, dialysis fluids . Mineral nutrients and supplements
- Gastro intestinal agents —acidifiers and antacids ,adsorbents, laxatives. Haematinics , Pharmaceutical aids , Expectorants - ammonium chloride , potassium iodide , Antidote -- sodium thiosulphate , sodium nitrite, Topical agents — astringents , protectants , silicone polymers-activated dimethicone , anti infectives , dental products-oral antisepics and astringents.

ORGANIC

- Study of hydrocarbons, carbonyl compounds , carboxyl acids and derivatives , nitrogen , halogens hydroxy compounds and ethers ; Study of hetero cyclic systems , five membered and six membered ring systems with 1-3 hetero atoms ; mechanism and application in drug synthesis of named reactions such as Beckmann 's and Fries rearrangement ,Phillips's condensation reaction, Mannich , Michael addition reaction .

MEDICINAL CHEMISTRY

- Nomenclature , classification ,structures ,mechanism of action ,SAR ,uses and synthesis of:-

  Antibiotics - Penicillins, Cephalosporin , Tetracyclines, Aminoglycosides
  Steroids —Cholesterol, Diosgenin , Stigmasterol , Ergosterol .
  Vitamins , Hormones , Alkaloids , Terpenoids.
- Drug Discovery, Drug Design
- Instrumentation and Pharmaceutical applications of UV, Visible IR, Spectrophotometry, , Fluorimetry, Refractometry, Polarimetry, , Conductometry, Electrophoresis , Flame Photometry .

PHARMACOGNOSY

- Determination of leaf constants, identification of crude drugs , identification of fibres by chemical tests, determination of ash values , extractive values, swelling factor and foreign organic matter .
- Study of mineral drugs, tannins.
- Study of biological sources, cultivation , collection , chemical constituents , substitutes ,adulterants , uses ,microscopic features of Liquorice, Digitalis ,Senna , Chirata , Lobelia, Belladonna ,Cinchona , Rauwolfia, Ephedra , Vasaka
- General techniques of biosynthetic studies and basic metabolic pathways .
- Brief introduction to biogenesis of secondary metabolites of pharmaceutical importance.

BIOCHEMISTRY

- Carbohydrate , Protein and Amino acid , Lipid metabolism, nucleic acid metabolism , biological oxidation..
- Enzymes, Mechanism, kinetics, enzyme inhibition, factors affecting enzyme action, isoenzymes, co-enzymes, metaloenzymes, allosteric-enzymes, clinical and therapeutic uses of enzymes.
- Role of minerals and water in biochemical processes .
- Qualitative and Quantitative measurement of Glucose, Urea, Cholesterol , Bile salts, Bile pigments , Creatinine , Calcium phosphates, SGPT,and SGOPT in Blood and abnormal constituents in urine .

INTRODUCTION TO ANATOMY & PHYSIOLOGY & PHARMACOLOGY

- Comprehensive knowledge of the anatomical consideration in relation to Nervous system (central and autonomic nervous system), Urinary system , Reproductive system, Digestive system, Respiratory system , Endocrine system , Blood and Blood forming organs , Lymphatic system, Cardiovascular system and Special Senses.
- Concept of Health and Diseases, Disease causing agents, prevention , communicable diseases —causative agents , modes of transmission and prevention of Chicken Pox , Measles , Influenza , Diphtheria , Whooping Cough , Tuberculosis , Poliomyelitis , Hepatitis , Cholera , Typhoid, Helminthlasis , Malaria , Filariasis , Rabies, Trachoma, Tetanus, Leprosy, Syphilis, Gonorrhea and AIDS ,family planning methods and devices.
- Types and preparation of media , theory of staining , Isolation and preservation of cultures , study of bacterial growth. Microbiology of air ,water and milk .
- Pharmacokinetics, Pharmacodynamics, Molecular mechanisms.
- Pharmacology of drugs acting on Autonomic nervous system, Central nervous system, Cardiovascular system , gastrointestinal tract , Excretory system ,Blood and respiratory systems.

PHYSICAL PHARMACY

- Theory and application of interfacial phenomenon , Colloids , Rheology, Micromeritics , Chemical kinetics , Complexation and Protein binding , Thermodynamics.

DRUG STORE MANAGEMENT AND PHARMACY ADMINISTRATION

- Goals of Production Management and Organization , Distribution , Drug store planning and layout , Sales Promotion , Inventory control, Elements of industrial Accountancy.

HOSPITAL & CLINICAL PHARMACY

- Objectives , functions , organization , planning , location layout of Hospital Pharmacy. Drug distribution to out patients and inpatients. Hospital drug policy : General considerations.
- Pharmacy and therapeutic committee - organization, formulary content, preparation and distribution, Hospital committees, Hospital manufacturing, patient data analysis .
- Basic and general principles of drug therapy: monitoring of drug therapy, adverse drug reactions, drug interactions, toxicology- types of poisons , general principles of treatment , types of antidote.
- Statistical inferences : Common parametric and non-parametric tests employed in testing of significance in Biological / Pharmaceutical experiments and elements of ANOVA(one way and two ways)

Forensic / Pharmaceutical jurisprudence

- Development of Pharmaceutical and drug legislation in India.
- The Pharmacy act, 1948, Drugs and cosmetics act 1940 and Drugs and cosmetics rules 1945.

- Drugs and magic remedies act, The Medicinal and Toilet preparation act, Drugs Price Control order, Legislations to control the operations regulating the dangerous drugs,, poisons and opium , The narcotic drugs and psychotropic substances act, 1985.
- Industries act, 1951, the Indian patents and design act, 1970 with reference to the drugs and Pharmaceuticals, prevention of food adulteration act.(acquaint with amendments to above acts)
- Pharmacy ethics : Introduction to code of ethics of Pharmacy, Pharmaceutical ethics , ethical guidelines for retail pharmacist, community ,manufacturing pharmacist and Pharmaceutical researcher.

22. PHYSICS

I. Mathematical Methods of Physics:

Dimensional analysis, Vector algebra and vector calculus, Linear algebra, matrices, Caley-Hamilton theorem, Eigenvalue and eigenvectors, Linear ordinary differential equations of first and second order, Special functions (Hermite, Bessel, Laguerre and Legendre). Fourier series, Fourier and Laplace transform. Elements of complex analysis, analytic functions: Taylor and Laurent series; poles, residues and evaluation of integrals. Elementary probability theory, random variables, binomial, Poisson and normal distributions. Central limit theorem. Data interpretation and analysis, Precision and accuracy. Error analysis, propagation of errors. Least square fitting, linear and nonlinear curve fitting and Chi-square test. Introductory group theory; SU(2), 0(3).

II. Classical Mechanics:

Newton's laws, Phase space dynamics, stability analysis, Central force motion. Two body collisions, scattering in laboratory and center-of-mass frames, Rigid body dynamics, moment of inertia tensor, Non-inertial frames and pseudoforces. Variational principle, Generalized coordinates, Lagrangian and Hamiltonian formalism and equations of motion. Poisson brackets and canonical transformations, Symmetry, invariance and Conservation laws, cyclic coordinates. Periodic motion, small oscillations, normal modes. Special theory of relativity, Loretz transformations, relativistic kinematics and mass-energy equivalence.

III. Electromagnetic Theory:

Electrostatics: Gauss's law and its applications, Laplace and Poisson equations, boundary value problems; Magnetostatics: Biot-Savart law, Ampere's theorem, electromagnetic induction. Maxwell's equations in free space and linear isotropic media; boundary conditions on the fields at interfaces; Scalar and Vector Potentials, Gauge invariance. Electromagnetic waves in free space. Dielectrics and conductors. Reflection, Refraction and Polarization, Fresnel's law, interference, coherence and diffraction. Lorentz invariance of Maxwell's equations, Dynamics of charged particles in static and uniform electromagnetic fields. Radiation from moving charges, dipoles and retarded potentials.

IV. Quantum Mechanics:

Wave particle duality, Schrodinger equation: time dependent and time independent. Wave functions in coordinate and momentum representations, Eigenvalue problems: particle in a box, harmonic oscillator etc.; Tunneling through a barrier. Wave function in coordinate and momentum representations. Commutators and Heisenberg uncertainty principle. Matrix representation, Dirac notation and state vectors. Motion in central potential: orbital angular momentum, angular momentum algebra, Spin, addition of angular momenta; Hydrogen atom. Stern-Gerlach experiment. Time independent perturbation theory and applications. Variational method. Time dependent perturbation theory and Fermi's golden rule, selection rules, semi-classical theory of radiation; Elementary theory of scattering, phase shift, partial waves, Born approximation, Identical particles, Pauli exclusion principle, Spin-statistics connection. Relativistic quantum mechanics: Klein Gordon and Dirac Equations.

v. Thermodynamics and Statistical Physics:

Laws of thermodynamics and their consequences. Thermodynamic potential, Maxwell relations, Chemical potential, phase equilibria. Phase space, micro and macro states, Micro-canonical, Canonical and Grand canonical ensembles and Partition functions. Free energy and its connection with thermodynamic quantities. First and second order phase transitions, Classical and quantum statistics. Ideal Bose and Fermi Gases. Principle of detailed balance. Blackbody radiation and Planck's distribution law; Bose-Einstein

condensation.

VI. Electronics:

Semiconductor devices (diodes, junctions, traosistors, field effect devices, homo- and hetero-junction devices), device structure, device characteristics, frequency dependence and applications. Opto-electronic devices (solar cells, photo-detectors, LEDs). Operational amplifiers and their applications. Digital techniques and applications (logic circuits, registers, counters and comparators). A/D and D/A convertors, Microprocessor microcontroller basics. Fundamentals of communication electronics, modulation techniques.

VII. Atomic & Molecular Physics:

Quantum state of an electron in an atom. Electron spin, Spectrum of Hydrogen, helium and alkali atoms. Relativistic corrections for energy levels of hydrogen atom, hyperfine structure and isotopic shift, width of spectrum lines, LS and JJ couplings. Zeeman, Paschen-Bach and Stark effects. Electron spin resonance, Nuclear magnetic resonance, Electronic, rotational, vibrational and Raman spectra of diatomic molecules, Frank-Condon principle and selection rules. Spontaneous and stimulated emission, Einstein A&B coefficients; Lasers, Optical pumping, population inversion, rate equation. Modes of resonators and coherence length.

VIII. Condensed Matter Physics:

Bravais lattices. Reciprocal lattice. Diffraction and structure factor. Bonding of solids. Elastic properties, phonons, lattice specific heat. Free electron theory and electronic specific heat. Response and relaxation phenomena. Drude model of electrical and thermal conductivity. Hall effect and thermoelectric power. Electron motion in a periodic potential, band theory of solids: metals, insulators and semiconductors. Superconductivity: type-I and type-II superconductors. Josephson junctions. Superfluidity. Defects and dislocations. Ordered phases of matter: translational and orientational order, kinds of liquid crystalline order. Quasicrystals.

IX. Nuclear and Particle Physics:

Basic nuclear properties; size, shape and charge distribution, spin and parity. Binding energy, semi-empirical mass formula, Liquid drop model. Nature of the nuclear force, form of nucleon-nucleon potential, charge independence and charge asymmetry of nuclear forces. Isospin; Deuteron problem. Evidence of shell structure, single particle shell model, its validity and limitations. Elementary ideas of alpha, beta and gamma decays and their selection rules. Fission and fusion, nuclear reactions, reaction mechanism, compound nuclei and direct reactions. Classification of fundamental forces; Elementary particles (quarks, baryons, mesons, leptons); C, P and T invariance and applications of symmetry arguments to particle reactions, parity non-conservation in weak interaction; Relativistic kinematics.

23. TEXTILE TECHNOLOGY

I. INTRODUCTION TO FIBRES, MANUFACTURED FIBRES YARN FORMATION ,POST SPINNING, ADVANCED YARN FORMATION

1. **Introduction to Textile fibres:** Textile elements defined, Textile Institute Classification of Textile fibres ,Physical and Chemical Properties of fibres, Classification of Count systems , Universal Yarn Numbering system, Conversion from one system to other and within the system. Classification of Unconventional Natural fibres

2. **Techno- Economical information of Natural fibres :** Cotton, Wool, Silk, Jute, Flax and Linen fibres ; Varieties of these fibres , properties and applications . Special feature of Wool (Heat of Wetting , DFE, Bilateral structure, Felting) , Developments in Cotton (Chemically modified, Bt, Coloured , Never dried)

a) Classification of Unconventional Natural fibres : Role of fibres like Asbestos, Basalt , Coir, Maize, in Technical Textiles

b) Introduction to Silk Technology : Life cycle of Silkworm, Types of crops in Silk growing , Various operations and their significance in Silk Technology, Classification of Silk yarns and Silk yarn testing .

c) Jute Technology: Flow chart of Jute fibre to yarn, Machines and technical parameters

3. Technology of Manufactured Fibres : Classification of Manufactured fibres, Unique properties , Principles of Man made fibre spinning , Basic aspects of process and machine elements, Substrate and Geometry of Manmade fibres , forms of production of Manufactured fibres, Batch and merge number, Surface modification of fibres, *Spin finishes for fibres:* Need , methods of application , removal and estimation *Manufacture of Manmade fibres:* Raw materials, Flow chart , properties and applications.

II. YARN FORMATION PROCESS (SPINNING)

i) Pre- Ginning & Ginning : Modern Cotton pickers , Ginning percentage and Modern Gins for Indian Cotton ,Contamination in Cotton bales, Bale formation , Bale management , Selection of Cotton , Application of LPP Blending systems in Spinning, Mixing and Ideal Mixing and IBI , Modern Mixing vessels ,selection of openers , Degree of Opening and Cleaning ,Individual and Overall Cleaning efficiency , Bye pass , Selection of Spinning machines for low ,medium and finer grades of Cotton, Fibre fracture , processing of 100 % synthetics and Blends . Chute feed systems and Autolevellers at Blow Room .

ii) Carding : Concept , elements and setting for Cotton , Synthetics and Blends, Snap and Nep study , Wrapping check , Modern Cards , Waste extraction at Cards, Autolevelling at Cards. Production problems

iii) Drawframe : Objectives, concept of Real and Ideal Draft, Drafting elements, drafting systems, types of Creels, selection of Pre- Drawing and Post —Drawing process. Treatment of Cotton, Synthetic and Blends, Modern Draw frames ,Quality Control checks., Role of Break draft on Drawn sliver quality, Production problems .

iv) Combing : Need, Degrees of Combing, Preparatory process to Combing and Rait-of Pre-Comb Draft and selection of Comber preparatory machines, 5-min test at \\ Comber, Waste extraction study, Head wise and Overall waste at Comber, Modern Comber and their elements .Production problems

v) Simplex : Objectives, Principles , Drafting systems and elements, Breakage study, Role of Break draft on Roving ,Modem developments ,Production problems.

vi) Ring Spinning : Objectives, Principles , Drafting systems and elements, Breakage study, Idle Spindle study, Snap study, Count Control, imperfections , types of Builds and Hank meter gain and Loss ,Twist contraction , Snap efficiency , Bonda waste, Arrangements for doffing and donning , Number of doffer boys, Migration of fibres , Spinning Triangle, Role of Break draft on Roving ,Modern developments ,Production problems. Types of twists and selection of twist level

vii) Post Spinning Process: Selection of Process, Types , Bundling , Baling and pressing , Concept of Average and Resultant Count. Hank Yarn Obligation , Spin plan for Cotton, blends and Synthetics. Production of Sewing thread .

viii) Advanced Yarn Formation : Limitations of Ring Spinning, Principle of Open-End Spinning, types, selection criterion, Effect of trash in Draw frame on Open end yarn quality, Working principle of Rotor , Friction, Airjet , Airjet- Ring spun , Air Vortex and Wrap technologies and applications of all these yarns .

Yarn Texturising : Need, Principles, Methods and Selection of methods , Testing of Textured yarn, Special care for weaving of Textured yarn.

II. FABRIC FORMATION (WEAVING)

i).Introduction to Weaving preparatory machines : Need , imperfections in Ring Yarns, Systems of Yarn preparation and selection of a system ,Principles of Winding and their selection, Classification of winding machines, elements of winding machine (Rotoconer and Autoconer) Optimum Yarn Clearing and Yarn Tensioning , Role of Electronic Yarn Clearers, Production problems , Material handling , Quality control studies.

ii). Introduction to Pirn winding : Principles, Selection , Elements of Pirn, working of Semi, Automatic and Fully Automatic Pirn winders, Quality control studies , production problems . Significance of spindle direction in relation to Yarn twist.

iii). iii)..Introduction to Warping : Principles, elements of Warping machine , Types of Creels and their performance and selection . Quality control study and material handling . Arrangements for selvedge ends on Warper beams .Construction of Warper beams and their specification. Defects in Warping , Production problems

iv) Introduction to Sizing : Need, forms and Degrees of Sizing , methods of Sizing, Working of Hank, Ball and Tape warp sizing machines, Various zones in Multi-cylinder sizing machine , Selection of size receipe and size add on and pickup calculation , Back beam creeling , wet pick up control, distribution of size and steam to cylinders, Size preparation (selection of ingredients , concentration calculation, working of cookers and storage devices , Modern approach to size receipe and pickup) , working of various types of controls , Beam winding mechanism, arrangement to made for doffing and donning of sized beams, Beam press rollers and Mechanisms, Beam storage , After waxing , Cutmark motions ,modern developments and production problems .

Introduction to Post Sizing operations: Need, Types , working of semi and automatic machines, drawing calculations, selection of heald wire , drop wire and Reed

v)Loom Gaiting and Loom operations and Mechanisms : Types of gaiting , loom classification and specification, loom shafts and calculation of speeds in relation to picks per repeat, working principles of Tappet , Dobby and Jacquard Shedding mechanisms, Detailed working of Primary and Secondary motions. Modern developments, Loom timing for these mechanisms , defects of these motions. Quality control studies . Loom makes of India , Reed selection and Reed parameters, concept of Beatup and mechanics of Primary and Secondary motions. Construction of shedding tappets. Fabric defects.

vi) Introduction to Automatic weaving : Principle , need , concept of reserve on pirn, Weft feeler and Cop transfer mechanisms, transfer failure , Quality control aspects , Material handling in entire weaving preparatory and weaving sheds and their selection. Defects in Automatic looms.

vii) Introduction to Shuttless Weaving : Need , draw backs of Shuttle loom, Principles of modern methods of weft insertion, selection , working principles , settings and Primary and Secondary motions on these looms , Yarn preparatory requirements, Techno-Economics of Modern weaving , makes of Shuttless machines , Modern batching systems, Role of Cyclops

viii) Introduction to Dobby and Jacquard Shedding : Machines , types , classification ,working elements and material of construction and functions. Numerical problems . Selection of picks and Reed for different sorts on Dobby and Jacquard. Process of transfer of design on to lags and cards. Modern Positive Dobby and E- Jacquard. Casting out in Jacquards- Numerical examples.

ix) Weft Patterning motions: Need , types , conventional and modern , setting for a specific pattern in Conventional and modern looms. Defects and remedies

x). Introduction to Knitting (Warp and Weft Knitting): Terminology, Classification, machines, representation of structures , properties . Knit fabric defects, Knit Geometry, Knitting Dynamics, Knit patterning. Modern Developments , Prodtiction problems

xi). Introduction to Nonwovens: Need, terminology, Classification, Methods of manufacture as per Reverse Engineering , Testing and machinery. Modern developments, SMS, Industrial applications

xii). Introduction to Fabric Structure : fabric notation, role of interlacement diagrams, classification of weaves, Linear and Non —Linear relations of elements of fabric structure, modification of plain ,twill and sateen weaves. Loom arrangements for these modifications. construction and development of primary , secondary and fancy weaves in single and multilayered structure- Card cutting instructions for advanced fabrics —Yarn preparatory requirements and beaming and drafting arrangements- construction and production of complex weaves like Damask, Brochade, Figured terry , Backed , Double , Treble cloths. Arrangements of motifs on different basis .Colour and weave effects. Ornamentation of weaves and fabrics.

3

III. <u>TEXTILE WET PROCESSING</u>

i). Fundamentals of Textile Chemistry : structure and bonds , molecular arrangement, flowchart for production of finished fabric from grey fabric.

Introduction to Desising (methods, evaluation) , Scouring (methods, pralerns f evaluation), Bleaching (Need , degree of Bleaching methods , evaluation), Mercerisation (Need, methods and evaluation)- Quality Control aspects in preparatory process to wet processing .

ii). Introduction to Dyeing : Need , Colour and Constitution of Dyes, Classification of Dyes, dye uptake, elements of dyeing, principles of Dyeing . Industrial practices of Dyeing of Cotton , Synthetics and Blends

iii). Introduction to Printing & Finishing : Need , concept of Printing , Print fixation, Printing styles and methods of Printing , Print paste selection and Rheology-Printing defects and their

remedies finishing and various of types of finishes for fabrics. and their evaluation . Fabric folding and packing.

IV. <u>TEXTILE TESTING ,QUALITY ASSURANCE ,MILL MANAGEMENT & TEXTILE INDUSTRY</u>

i). Introduction to Statistical Quality Control: Need, methods of Sampling, Sample size determination with CV%, Sampling errors, Frequency and Weight distributions, Significance testing and ANOVA, Design of Experiments and Control Charts.

ii). Introduction Textile Testing & Quality Assurance : Need, Standard Testing conditions, fibre , yarn and fabric sampling , measurement and interpretation of fibre length, fibre fineness, maturity, strength, elongation, working principles of AFIS, HVI. measurement of fabric properties, Subjective Vs Objective properties, Interpretation of fabric properties and effect on fabric low stress mechanical properties interms of geometrical properties and treatment conditions. Effect of process parameters of Textile production like Spinning, weaving and Wet processing on fabric properties. Reverse Engineering and fabric designing . Role of KES-F, KES-Y and FAST methods of testing and interpretation. Correlation and Regression between properties of fibre, yarn and fabric .

iii) . QUALITY STANDARDS FOR TEXTILES : Role of ISO, SAS, ASTM, DIN, AATCC, BS, and their utility.

iv). Industrial Climatology, Mill Management & Textile Industry : Selection of suitable location, Layout, Maintenance programme, Concept and implementation of Safety , Work study and determination of Standard Time , Machine interference, Plant lighting , Ventilation , RH% and Humidification systems, types and levels of Management, functions, Authority and Delegation , Decision making process, Control process, MBO, Concept of **Quality Circles and Six Sigma. Concept of Lean production , Implementation of Lean and Six Sigma.** Brief note on various types of concepts like Cost sheet, process costing , Financial statements and Management , Inventory control and ABC analysis.

V. **ROLE OF GOVT. OF INDIA IN PROMOTION OF TEXTILE AND ITS ALLIED ACTIVITIES :** Role of Ministry of Textiles. Various branches of MOT, TMTT, TMC, 16- Technical Textiles as defined by MOT.

VI. **TECHNICAL TEXTILES:** Textiles in Aerospace, Dairy, Agriculture, Horticulture, Medical, Manufacturing fields,Protec, Buildtech, Automobile ,Geotextiles, Filtration .

Annexure-III

INSTRUCTIONS TO CANDIDATES

A. INSTRUCTIONS TO CANDIDATES:

A.1. The applicants are required to go through the user guide and satisfy themselves as to their eligibility for this recruitment carefully before applying and enter the particulars completely online.

A.2. Applicant must compulsorily fill-up all relevant columns of application and submit application through website only. The particulars made available in the website will be processed through computer and the eligibility decided in terms of notification and confirmed accordingly.

A.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 delay/discrepancy on part of the candidate.

A.4. Applicants must compulsorily upload his/her own scanned photo and signature through .jpg format.

A.5. The applicants should not furnish any particulars that are false, tampered, fabricated or suppress any material information while making an application through website.

A.6. Important:-Hand written/typed/Photostat copies/printed application form will not be entertained.

A.7. The applicant shall produce all the essential certificates issued by the competent authority, for verification by the commission, as and when called for. If candidates fail to produce the same, his/her candidature shall be rejected / disqualified without any further correspondence.

A.8. The following certificate formats are available on the Commission's Website

*(*https://psc.ap.gov.in*)* for reference.

A.8.1. Community, Nativity and Date of Birth Certificate

A.8.2. Declaration by the Un-Employed

A.8.3. School Study Certificate

A.8.4. Certificate of Residence

A.8.5. Medical Certificate for the Blind

A.8.6. Certificate of Hearing Disability and Hearing Assessment

A.8.7. Medical Certificate in respect of Orthopedically Handicapped Candidates

A.8.8. Creamy Layer Certificate

A.8.9. Local status certificate (if applicable)

B. INSTRUCTIONS REGARDING OFF-LINE EXAMINATION FOR CANDIDATES (if Screening test is held):

B.1. The candidates should go through the instructions given on the cover page of test booklet and carefully write his/her Registration Number, Subject / Subject Code, Booklet Series, Name of the Examination Centre etc., in the Answer Sheet, which will be provided to him/her in the examination hall.

B.2. Since the answer sheets are to be scanned (valued) with Optical Mark Scanner system, the candidates have to USE BALL POINT PEN (BLUE or BLACK) ONLY FOR MARKING THE ANSWERS. The candidates will be supplied OMR Sheet consisting of two copies i.e., the Original Copy (Top Sheet) and Duplicate Copy (Bottom Sheet). 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 (Top Sheet) to the invigilator in the examination hall. If any candidate takes away the original OMR Sheet (Top Sheet) his/her candidature will be rejected.

However the candidate is permitted to take away the duplicate (Bottom Sheet) OMR Sheet for his/her record. The candidates should bring Ball Point Pen (Blue or Black and smooth writing pad) to fill up relevant columns on the Answer Sheet. The candidate must ensure encoding the Registration Number, Subject/Subject Code, Booklet Series correctly, write the Name of the Examination Centre, appending Signatures of the Candidate and Invigilator, etc., on the O.M.R. Answer sheet correctly, failing which the Answer sheet will not be valued. Use of whitener / correcting fluid / Blade / Powder/ Eraser / folding / Tearing / Rough Work or any kind of tampering to change the answers on OMR Sheet will lead to disqualification / invalidation / rejection. No correspondence whatsoever will be entertained from the candidates in this regard.

B.3. The OMR Sheet is to be bubbled by Ball Point Pen (Blue or Black) only. Bubbling by Pencil / Ink Pen / Gel Pen is not permitted in this examination. Any kind of tampering to change the answers on the OMR Sheet will lead to disqualification / invalidation / rejection. No correspondence whatsoever will be entertained from the candidates in this regard.

C. INSTRUCTIONS REGARDING ON-LINE EXAMINATION FOR CANDIDATES:

C.1. The candidates should take their seats at the prescribed time before the commencement of the examination. Biometric identification would be conducted before entry into examination hall. The entry time would be mentioned in the hall ticket. Late entry after the given entry time would not be allowed. Candidates should not leave the examination hall till the expiry of fulltime. Loaning and interchanging of articles among the candidates is not permitted in the examination hall. Electronic devices including cell phones and pagers are not allowed in the examination hall.

C.2. The starting time of each examination paper and the entry time would be mentioned in the hall ticket

C.3. Candidates will not be permitted to leave the examination hall till the expiry of full time. If any candidate leaves the examination hall in the middle, he would be disqualified. If there is any problem with computer system, the candidates have to wait without talking to others till the system is restored. In case of any violation, the candidate will be disqualified.

C.4. The examination link with the login screen will already be available on your system. Please inform the invigilator if this is not the case.

C.5. 10 minutes prior to the exam, you'll be prompted to login. Please type the Login ID (Roll No) and the Password (Password for Candidate will be given on exam day) to proceed further.

C.6. Invigilator will announce the password 15 minutes before commencement of the Examination.

C.7. Copying or noting down questions and/or options is not allowed. Severe action will be taken if any candidate is found noting down the questions and/or options.

C.8. After logging in, your screen will display:

*Profile Information - Check the details & click on "I Confirm" or "I Deny".

*Detailed exam instructions - Please read and understand thoroughly.

*Please click on the "I am ready to Begin" button, after reading the instructions.

C.9. You have to use the mouse to answer the multiple choice type questions with FOUR alternative answers.

C.10. To answer any numerical answer type question, you need to use the virtual numeric key pad and the mouse.

C.11. On the online exam question screen, the timer will display the balance time remaining for the completion of exam.

C.12. The question numbers are color coordinated and of different shapes based on the process of recording your response: White (Square) - For un-attempted questions. Red (Inverted Pentagon) - For unanswered questions. Green (Pentagon) - For attempted questions. Violet (Circle) - Question marked by candidate for review, to be answered later. Violet (Circle with a Tick mark) - Question answered and marked by candidate for review.

C.13. After answering a question, click the SAVE & NEXT button to save your response and move onto the next question.

C.14. Click on Mark for Review & NEXT to mark your question for review, and then go to the next question.

C.15. To clear any answer chosen for a particular question, please click on the CLEAR RESPONSE button.

C.16. A summary of each section, (i.e. questions answered, not answered, marked for review) is available for each section. You have to place the cursor over the section name for this summary.

C.17. In case you wish to view a larger font size, please inform the Invigilator. On the Invigilator's confirmation, click on the font size you wish to select. The font size will be visible on the top.

C.18. You may view INSTRUCTIONS at any point of time during exam, by clicking on the INSTRUCTIONS button on your screen.

C.19. The SUBMIT button will be activated after 150 Minutes. Please keep checking the timer on your screen.

C.20. In case of automatic or manual log out, all your attempted responses will be saved. Also, the exam will start from the time where it had stopped.

C.21. You will be provided a blank sheet for rough work. Do write your Login ID and Password on it. Please ensure that you return it to the invigilator at the end of the exam after tearing only the password from it.

C.22. Please don't touch the key board as your exam ID will get locked. If your ID gets locked, please inform a nearby invigilator who will help in unlocking your ID and then you can continue with the exam.

C.23. Please inform the invigilator in case of any technical issues.

C.24. Please do not talk to or disturb other candidates.

C.25. In case you are carrying articles other than the admit card, photo identity proof and pen, please leave them outside the exam room.

C.26. You cannot leave exam room before submitting the paper. Please inform the invigilator if you want to use the wash room.

D. GENERAL INSTRUCTIONS TO CANDIDATES:

D.1. If the candidate notices any discrepancy printed on the Hall ticket, as to community, date of birth etc., he/she may immediately bring it to the notice of Commission's officials/Chief Superintendent in the examination centre and necessary corrections can be made in the Nominal Roll, in the Examination Hall against his/her Hall Ticket Number for being verified by the Commission's Office.

D.2. The candidate should satisfy the Invigilator of his/her identity with reference to the signature and photographs available on the Nominal Rolls and Hall Ticket.

D.3. The candidates should take their seats at the given time before the commencement of the examination and are not to be allowed after the scheduled time. The time of Examination and entry time would be mentioned in the hall ticket. Late entry after the given entry time would not be allowed. Candidates should not leave the examination hall till the expiry of fulltime.

D.4. The candidates must note that his/her admission to the examination is strictly provisional. The mere fact that an Admission to the examination 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. The candidates have to be found suitable after verification of original certificates; and other eligibility criteria. The Applicants have to upload his/her scanned recent colour passport photo and signature to the Application Form. Failure to produce the same photograph, if required, at the time of interview/ verification, may lead to disqualification. Hence the candidates are advised not to change their appearance till the recruitment process is complete.

D.5. The candidates are not allowed to bring any Electronic devices such as mobile / cell phones, programmable calculators, tablets, iPad, Bluetooth, pagers, watches or any other computing devices to examination Hall. Non programmable calculators would be permitted, wherever necessary. Loaning and interchanging of articles among the candidates is not permitted in the examination hall and any form of malpractice will not be permitted in the exam hall.

D.6. The candidates are expected to behave in orderly and disciplined manner while writing the examination. Their candidature will be rejected in case of impersonation/ disorder/ rowdy behaviour during Examination and necessary F.I.R. for this incident will be lodged with concerned Police Station. The Chief Superintendent of the centre is authorized to take spot decision in this matter.

D.7. Candidates trying to use unfair means shall be disqualified from the selection. No correspondence whatsoever will be entertained from the candidates.

D.8. 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 Examination. Action will be taken to penalize as per G.O.Ms.No.385, G.A. (Ser. A) Dept., Dt.18/10/2016.

D.9. (a) Wherever the candidates are totally blind, they will be provided a scribe to write the examination and 20 minutes extra time is permitted to them per hour. Eligible candidates are also allowed to bring their own scribe after due intimation to the Commission after duly providing the full identification details of the scribe like name, address and appropriate proof of identification.

(b) The applicants shall upload the certificate relating to percentage of disability for considering the appointment of scribe in the examination.

(c) An extra time of 20 minutes per hour is also permitted for the candidates with locomotor disability and CEREBRAL PALSY where dominant (writing) extremity is affected for the extent slowing the performance of function (Minimum of 40% impairment). No scribe is allowed to such candidates.

(d) The candidate as well as the scribe will have to give a suitable undertaking conforming to the rules applicable

D.10. In case the Hall-Ticket is without photo or too small, he/she should affix a passport size photo on Hall-ticket and appear by duly getting attested by Gazetted Officer. He/she shall handover similar photo for each paper to Chief Superintendent for affixing the same on the Nominal Rolls.

D.11. The candidate will not be admitted to the examination Hall without procedural formalities.

D.12. The candidate admission to the Examination is provisional, subject to the eligibility, confirmation/satisfaction of conditions laid down in this notification.

D.13. The candidates should put his/ her signature and get the signature of the invigilator at the appropriate places in the Nominal Roll or OMR Answer Sheet.

D.14. Instructions to be followed scrupulously in the Examination Hall.

ANNEXURE-IV
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,

Palliredy 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. Budubunjala/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 (Non-Brahmins) (Shudra Caste) whose traditional occupation is playing musical instruments, vending of flowers and giving assistance in temple service but not Shivarchakars. Included vide G.O. Ms. No. 7, Backward Classes Welfare (C2) Dept., Dt. 19/02/2011).
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.
48. Kalinga Komati / Kalinga Vysya vide G.O. Ms. No.10 Backward classes Welfare (c) Department Dated.24.9.2014. The area of operation shall be confined to Srikakulam, Vizianagaram and Visakhapatnam districts 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.

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ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

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Dr. P.SATHI REDDY
SECRETARY (I/C)

Lr.No.APSCHE/PGP/Equiv./APPSC-Mech.Eng./2012 Dt. 31.12.2012

02 JAN 2013
01522

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad- 500 001

Sir,

Sub: APSCHE – PGP – APPSC - Recruitment (Direct) to the post of Lecturers in Government Polytechnics vide Notification No. 19/2012 – Equivalence of certain subjects – clarification - furnished - reg,

Ref:1. Your Lr. No. 1940/RS-38/2/2012, dt: 22/11/2012
2. Your Lr. No. 1425/RS-38/2011, dt: 06.12.2012

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While referring to the subject and references cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted a Committee consisting of University professors and representative from the O/o Commissioner of Technical Education, Hyderabad, to examine the equivalence of B.Tech Mechanical Engineering with that of B.Tech Automobile Engineering, Production Engineering and Aeronautical Engineering.

After going through the syllabi of B.Tech Mechanical Engineering, Automobile Engineering, Production Engineering and Aeronautical Engineering, the committee opined that

1. Above 80% of syllabi pertaining to B.Tech (Automobile Engineering) and B.Tech (Production Engineering) is common with B.Tech (Mechanical Engineering).
2. Whereas 42% of syllabi of B.Tech (Aeronautical Engineering) is common with B.Tech (Mechanical Engineering).
3. As per the procedure in vogue of JNT University, Hyderabad, Osmania University, Hyderabad and Andhra University, Visakhapatnam, the academic equivalence will be considered for the courses where the syllabi and course structure is common about 80%.
4. In this context, B.Tech (Automobile Engineering) and B.Tech (Production Engineering) may be considered as academically equivalent with B.Tech (Mechanical Engineering). However, **B.Tech (Aeronautical Engineering) will not be considered academically equivalent with B.Tech (Mechanical Engineering).**
5. The details of common subjects semester wise are furnished below:

The particulars of subjects common with Mechanical Engineering

Year	Semester Wise	Production Engineering	Automobile Engineering	Aeronautical Engineering
1st Year		7	7	7
2nd Year	1st	6	6	4
	2nd	6	6	1
3rd Year	1st	6	6	1
	2nd	4	4	2
4th Year	1st	3	4	1
	2nd	1	1	Nil
Total		33	34	16

Total No. of B.Tech (Mechanical Engineering) course subjects are 38.

Finally the committee recommended that B.Tech (Automobile Engineering) and B.Tech (Production Engineering) may be considered as academically equivalent with B.Tech (Mechanical Engineering). **B.Tech (Aeronautical Engineering) will not be considered academically equivalent with B.Tech (Mechanical Engineering).**

While referring to the equivalence of M.Sc Astronomy, M.Sc Electronics, M.Sc Instrumentation with that of **M.Sc Physics vide reference (1) cited and equivalence of B.Tech Civil Environmental Engineering with that of Civil Engineering vide reference 2** cited , A.P. State Council of Higher Education has already examined these issues on 07.02.2012 and 13.06.2012 and the recommendations of the Committees in concerned subjects were already communicated (copies enclosed).

With regard to clarification on the eligibility of candidates with M.Tech 1st class and a pass in 1st/2nd class in B.Tech for this notification, copy of Govt. Memo vide No. 13208/TE.I/A1/12-1 dt: 01.12.2012 addressed to CTE, Hyderabad is herewith enclosed.

Encl: a.a

Yours faithfully

SECRETARY

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Dr. P.SATHI REDDY
SECRETARY (I/C)

Lr.No.APSCHE/PGP/Equiv./APPSC/AEE/2012 Dt. 16.06.2012

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad- 500 001

Sir

Sub: APSCHE – PGP – APPSC - Recruitment (Direct) to the post of AEEs in various Engineering Services - clarification on equivalence of B.E Civil Environmental Engineering with that of B.E/B.Tech Civil – information – furnished- reg.,

Ref: Letter No. 120/RS-20/AEE/2008, dt: 17/05/2012 from the Secretary, APPSC

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While referring to the subject and reference cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted a two man committee consisting of University professors, to examine the equivalence of B.E Civil Environmental Engineering offerred by Andhra University with that of B.E/B.Tech Civil Engineering of other Universities.

The Committee examined the syllabus of B.Tech Civil Engineering and B.Tech Civil Environmental Engineering rigorously and viewed that B.E Civil Environmental Engineering offerred by Andhra University is equivalent to regular B.E/B.Tech Civil Engineering syllabus. In addition to the regular subjects, more focus is given on Environmental Engineering.

Finally it is resolved by the Members that B.E Civil Environmental engineering offerred by Andhra University is equivalent to regualr B.E/B.Tech Civil Engineering.

Yours faithfully

(SECRETARY)

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SECRETARY I/c

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utes of the Meeting of the Subject Committee in Physics discipline to examine the vance of M.Sc specialization for the Lecturer post in Physics at Undergraduate level held on sday the 07.02.2012 at 11.00 AM in the O/o A.P. State Council of Higher Education, erabad.

nbers Present:

1. Prof. M.Nagabhushanam
   Chairperson, Board of Studies,
   Dept. of Physics, Osmania University
   Hyderabad

2. Prof. K.Niranjan
   Chairperson, Board of Studies,
   Dept. of Physics,Andhra University
   Visakhapatnam

3. Prof. S Buddhudu
   Chairperson, Board of Studies,
   Dept. of Physics, Sri Venkateswara
   University, Tirupati, Chittoor. Dist

The Chairman, A.P. State Council of Higher Education welcomed the Members for ding the Meeting and explained that the background for constituting this Committee. While ssing, it is informed that the Government accorded permission to fill up 354 vacancies by itment of lecturers in various subjects in Government Degree Colleges under direct itment. In this connection, O/o CCE requested for subject relevancy for various posts to SC for issue of notification. Accordingly, the Director of Collegiate Education, Hyderabad t clarification on the relevance and eligibility of subjects at PG level for various lecturer s. Further, the Chairman requested the **Subject Committee in Physics** to examine the ous and other relevant documents before arriving at a undisputed decision in this matter.

The Members of the **Subject Committee in Physics** have examined the material and ssed in detail about the eligibility criteria for the recruitment of lecturer in Physics at graduate level based on various courses/ specializations offered at Postgraduate level in ersities.

It is resolved that all the candidates who possess Masters degree (M.Sc, M.Sc (Tech) in the following subjects with Physics as one of the main subjects at B.Sc level in all the ears of Undergraduate Courses are eligible for the recruitment of lecturer in Physics at UG It is mandatory that the candidate should have studied Physics at UG level. Apart from

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the above, all the candidates who possess M.Sc (Physics) under 5 year integrated courses are also eligible as it includes both UG and PG Physics subjects.

S.NO	Qualification	Specialization	Remarks
1	M.Sc/ M.Sc Tech	Physics	The candidates should have studied Physics Subject at UG level
2		Materials Science	
3		Solid State Physics	
4		Condensed Matter Physics	
5		Space Physics	
6		Nuclear Physics	
7		Electronics	
8		Electronics & Instrumentation	
9		Applied Physics	
10		Instrumentation	
11		Opto-Electronics	
12		Five Integrated M.Sc Physics	
13		Microwaves	
14		Bio Physics	
15		Meteorology & Oceanography	
16		Geo Physics	
17		Astro Physics	
18		Astronomy	
19		Nano Science	
20		Nano technology	
21		Photonics	
22		Energy Management	
23		Electronic Communications	

7/2/12

Prof. M.Nagabhushanam
Chairperson, BOS,
Dept. of Physics, Osmania University, Hyderabad

7/2/12

Prof. K.Niranjan
Chairperson, BOS,
Dept. of Physics,
Andhra University
Visakhapatnam

Prof. S Buddhan
Chairperson, BOS
Dept. of Physics
Venkateswara
University, Tirup

Memo.No.132

Sub:

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Class in Bachelors
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To
The Commissioner of
A.P., Hyderabad.
SF/Sc

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Dr. P. SAHI REDDY
SECRETARY I/C

Lr.No.APSCHE/PGP/equiv/APPSC/Poly.lec/2013 Dt. 12.08.2013

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad - 500 001

Sir,

Sub: APSCHE- PGP- APPSC- Recruitment (Direct) to the posts of lecturers in Govt. Polytechnic Colleges vide notification No. 19/2012, dt:30.07.2012 - clarification on equivalence of certain subjects- furnished - reg.

Ref: Two Letters No. 1940/RS-38/2012 dt: 05.07.2013 received from APPSC

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While referring to the subject and reference cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted two Expert Subject Committees in Mechanical and Civil Engineering consisting of University Professors, to examine the equivalence of the degrees mentioned in the reference cited to that of B.Tech/ B.E Civil Engineering/ Mechanical Engineering branches.

The Committees examined the syllabi of Degrees mentioned in the reference cited thoroughly and recommended that;

I. Mechanical Engineering

a. In first year the subjects are common for B.Tech Production Engineering offered by Acharya Nagarjuna University & B.Tech Industrial & Production Engineering offered by Sri Venkateswara University & Sri Krishnadevaraya University on par with B.Tech Mechanical Engineering offered by Andhra University, Kakatiya University, Osmania University and Jawaharlal Nehru Technological University Hyderabad/ Kakinada/ Ananthapur.

b. However from the 2nd year to 4th year, the components of various areas like Thermal Engineering group, Design group and Manufacturing groups covered in B.Tech Production Engineering offered by Acharya Nagarjuna University & B.Tech Industrial & Production Engineering offered by Sri Venkateswara University & Sri Krishnadevaraya University are mapping with B.Tech Production Engineering offered by Andhra , Kakatiya, Osmania and JNTU Hyderabad/ Kakinada/ Anantapur.

Therefore, it is finally resolved that;

The B.Tech Production, Industrial & Production Engineering courses offered by Acharya Nagarjuna University, Sri Venkateswara University and Sri Krishnadevaraya University respectively are equivalent with B.Tech Mechanical Engineering, Production & Industrial Engineering offered by Andhra, Kakatiya, Osmania & JNTU Hyderabad/ Kakinada/ Anantapur.

II. *Civil Engineering*

(A) Basic Sciences, Humanities & Social Science subjects viz., English, Engineering Mathematics, Engineering Physics, Engineering Chemistry and Corresponding Laboratories are not covered in B. Architecture.

(B) The following subjects are need to be covered under B.E/B.Tech Civil Engineering

1. Basic Civil Engineering subjects viz.,
   - i. Strength Materials – I & II,
   - ii. Fluid Mechanics
   - iii. Engineering Geology and
   - iv. Corresponding Labs
2. Core Civil Engineering subjects viz.,
   - i. Soil Mechanics
   - ii. Foundation Engineering,
   - iii. Hydraulic Machinery,
   - iv. Transportation Engineering and
   - v. Corresponding Labs
3. Other essential Civil Engineering subjects viz.,
   - i. Structural Analysis – I & II,
   - ii. Water Resources Engineering I & II
4. Some Elective subjects viz.,
   - i. Bridge Engineering ,
   - ii. Ground improvement Techniques
   - iii. Advanced Transportation Engineering
   - iv. Pre-Stressed Concrete
   - v. Advanced Structural Analysis
   - vi. Advanced Structural Engineering

Overall, the following subjects are not covered under B. Architecture programme.

Engineering Mathematics, Engineering Physics & Laboratory, Engineering Chemistry & Laboratory, Engineering Drawing, English Language, Strength of Materials – I & II, Fluid Mechanics, Hydraulic Machinery, Water Resources Engineering , Transportation Engineering, Soil Mechanics, Foundation Engineering, Structural Analysis I & II, Engineering Geology, Strength of Materials – Lab, Fluid Mechanics – Lab, Soil Mechanics – Lab, Engineering Geology Lab, Concrete Technology & Lab, Transportation Engineering Lab, Environmental Engineering Lab

It is inferred that, most of the Courses/Subjects of B.E/B.Tech Civil Engineering courses and Syllabi are not matching with B. Architecture Course and Syllabi

Hence, it is finally recommended that, B. Architecture cannot be considered as an equivalent to B.E/B.Tech Civil Engineering Course.

This is for favour of information

Yours faithfully

SECRETARY

12/8/

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

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Dr. P.SATHI REDDY
SECRETARY (I/C)

Lr.No.APSCHE/PGP/Equiv./APPSC/IGNOU/2012

Dt. 28.12.2012

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad- 500 001

Sir

Sub: APSCHE – PGP – APPSC - Recruitment (Direct) to the post of AEEs in various Engineering Services - clarification on equivalence of B.E Civil Construction Management of IGNOU, New Delhi with that of B.E/B.Tech Civil Engineering– furnished- reg.,

Ref: Your Letter No. 120/RS-20/AEE/2008, dt: 18.10.2012

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While referring to the subject and reference cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted a three member committee consisting of University professors, to examine the equivalence of B.E Civil Construction Management of IGNOU, New Delhi with that of B.E/B.Tech Civil Engineering offered in A.P. State Universities.

The Committee reviewed the course structure of B.Tech Civil (Construction Management) offered by Indira Gandhi National Open University (IGNOU), New Delhi and found that the essential courses of B.Tech/ B.E Civil Engineering as detailed below are missing.

i) Surveying I & II
ii) Engineering graphics / Drawing
iii) Engineering Geology
iv) Building drawing & material
v) English (Technical)
vi) All laboratories including physics and chemistry

Further the Committee noted that the laboratory courses which is essential component in Engineering education are missing. For conventional Civil Engineering Course at least 16 (sixteen) laboratory courses are required where as only 2 (two) laboratory courses are found in B.Tech Civil (Construction Management) of IGNOU, New Delhi.

Keeping in view of the above shortfalls, the Committee finally resolved that ***the B.Tech Civil (Construction Management) offered by IGNOU, New Delhi could not be considered as an equivalent to B.Tech / B.E Civil Engineering course.***

Yours faithfully

(SECRETARY)

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

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Dr. P.SATHI REDDY
SECRETARY (I/C)

Rc.No.APSCHE/PGP/equiv/APPSC/Poly.lec/2013 Dt. 24.08.2013

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad- 500 001

Sir,

Sub: APSCHE- PGP- APPSC- Recruitment (Direct) to the posts of lecturers in Govt. Polytechnic Colleges vide notification No. 19/2012, dt:30.07.2012 - equivalence of B.Tech CSIT/IT with that of B.Tech CSE and vice versa- clarification furnished - reg.

27 AUG 2013

Ref: Two Letters No. 1940/RS-38/2012 dt: 17.07.2013 & 20.08.2013 of APPSC

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While referring to the subject and reference cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted Expert Subject Committee consisting of University Professors, to examine the equivalence of B.E/B.Tech CSIT/ IT/IST with that of B.E/B.Tech Computer Science Engineering and vice versa.

The Committee *after going through the syllabi and thorough discussion, made the following observations;*

a. The B.Tech CSE(Computer Science Engineering), IT(Information Technology), IST (Information Science and Technology) and CSIT (Computer Science and Information Technology) syllabus of various Universities in the State have been reviewed and found that more than 75% of the syllabi is same for all these courses.

b. In the remaining 25%, in case of B.Tech CSE (Computer Science Engineering) , it is hardware oriented and for B.Tech IT (Information Technology), it is of application oriented.

Therefore, it is finally recommended by the Committee that the courses B.E/B.Tech CSIT/, IT and IST are considered equivalent with that of B.E/B.Tech Computer Science Engineering (CSE) and vice versa for recruitment to the posts of lecturers in Govt. Polytechnic Colleges.

This is for your kind information

Yours faithfully

SECRETARY

24/8

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Dr. P.SATHI REDDY
SECRETARY (I/C)

Lr. No. APSCHE/PGP/equiv/APPSC/AEE/2013

Dt. 17.05.2013

To
The Secretary
A.P. Public Service Commission
Nampally, Hyderabad- 500 001

Madam,

Sub: APSCHE- PGP- APPSC- Recruitment Direct to the post of Assistant Executive Engineers, Commissions Notification No. 41/2011- Equivalence of Qualification in Engineering Degree - clarification -- requested - reg.

Ref: Your Lr. No. 1790/RS-20/AEE/2010, dt: 25.04.2013

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While referring to the subject and reference cited, I am by direction, to inform that A.P. State Council of Higher Education has constituted two Expert Subject Committees in Mechanical and Civil Engineering consisting of University Professors, to examine the equivalence of the degrees mentioned in the reference cited to that of B.Tech/ B.E Civil Engineering/ Mechanical Engineering branches.

The Committees examined the syllabi of Degrees mentioned in the reference cited thoroughly and recommended that;

a. B.Sc Engg (Mechanical) offered at *Tilkamanji Bhagalpur University, Bhagalpur is considered equivalent to B.Tech Mechanical Engineering program offered by any standard University.*

b. B.Tech Mechanical Engineering (Mechatronics) offered by JNTU Hyderabad is *considered equivalent to B.Tech Mechanical Engineering program offered by any standard University.*

c. B.Tech (Mechanical & Automation Engineering) offered by *Gurugobind Singh Indraprastha University, Delhi, is considered equivalent to B.Tech Mechanical Engineering program offered by any standard University.*

d. B.Tech Civil Engineering offered by Malavya Rashtriya Institute of Technology (National Institute of Technology), Jaipur is considered equivalent to BE/ B.Tech Civil Engg.

e. B.Sc Engg (Civil Engineering) offered by Tilkamanjhi Bhagalpur University, Bhagalpur is considered equivalent to BE/ B.Tech Civil Engg.

f. B.Sc Engg (Civil Engineering) offered by Muzaffarpur Institute of Technology, Muzaffarpur, Bihar is considered equivalent to BE/ B.Tech Civil Engg

g. B.Sc Engg (Civil Engineering) offered by Magadh University, Bodhgaya, Bihar is considered equivalent to BE/ B.Tech Civil Engg

h. B.Tech Civil & Transportation Engineering offered by National Institute of Technology, Agarthala is considered equivalent to BE/ B.Tech Civil Engg.

Regarding validity of Degrees obtained through Vinayaka Missions University, Tamil Nadu under distance mode, I am by direction to inform that Vinayaka Missions University is a deemed to be University. The degrees awarded by the Deemed to be Universities for the programs offered under distance education mode through study centres located in A.P. are not recognized. AICTE, whose approval is mandatory to run professional programs under distance mode, has not granted approval to any University to run Engineering courses under distance mode. Hence such Degree are not recognized. Govt. has also given clarification in this regard vide lr. no.273/EC/A2/2013 dt: 19.03.2013 (copy enclosed).

This is for favour of information.

Yours faithfully

for SECRETARY 17/5