MBA / MCA / M.E., / M.Tech., / M.Arch.,

COMMON ENTRANCE TEST - 2010

Information Brochure

Consortium of Self - Financing Professional, Arts and Science Colleges in Tamilnadu

New No.29, Ganapathy Street, Royapettah, Chennai - 600 014.
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1.0. GENERAL

1.1 In persuance to the orders of the Honourable Supreme Court in the Islamic Academy of Education *Vs* State of Karnataka (1993) 6SCC 697, a Common Entrance Test is to be conducted by an association of colleges of a particular type in that State. Seven Associations in the State of Tamilnadu have formed a Consortium in the name of "Consortium of Self Financing Professional, Arts and Science Colleges in Tamilnadu", where various Engineering Colleges, Arts, Science and Management colleges are also members. The Consortium has been granted permission to conduct Common Entrance Test - 2010 for MBA / MCA / M.E/ M.Tech/ M.Arch courses to admit students in various Private Engineering, Arts, Science and Management colleges under the Management Quota in the state of Tamilnadu by the "Committee to oversee the Admission made by the Consortium of Self Financing Professional, Arts and Science Colleges", Chennai *'vide'* its Proceeding No.COA/B.E.,/B.Tech.,/B.Arch.,/MBA/ MCA/M.E/M.Tech.,/01/2010, Dated : 20.04.2010

1.2 Acceptance of a person as a Candidate for writing the MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test 2010 does not confer on the person the right of Equivalent eligibility for admission to any of the above Courses. The decision on the eligibility of the candidates for admission to a course entirely rests with the respective admitting authorities offering the courses.

2.0 ELIGIBILITY

2.1 The eligibility of courses under the category of MBA / MCA / M.E/ M.Tech/ M.Arch are given below.

a) M.B.A. Degree Programme :

I) A pass in any Degree with 10+2+3/4 years pattern. (or)

ii) A pass in any degree with 10+3 (Diploma) +3 year pattern.

Candidates who have already passed the above qualifying degree course and those who have appeared for the final semester / year examination of the said qualifying degree course during April / May 2010 may apply for MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test - 2010, for admission to M.B.A. degree programme.

b) M.C.A.Degree Programme :

I) A pass in any Degree with 10+2+3/4 years pattern with Mathematics* at +2 level or with Mathematics / Statistics** as one of the subjects at the degree level.

ii) *Mathematics or Business Mathematics.

**Business Mathematics, Business Statistics, Algorithm and Numerical Methods, Numerical and Statistical Methods, Probability and Statistics, Probability Mathematics, Numerical Methods, Algebra and Probability Mathematics, Quantitative Techniques, Computer Oriented Numerical Methods. Engineering Mathematics, Mathematics for Management, Operations Research, Discrete Mathematics, Computational methods, Bio-Statistics, Allied Mathematics, Allied basic Mathematics, algebra - Analytical Geometry of three dimensions and Trigonometry, Business Statistics and Operation Research, Quantitative Methods of Business.

Candidates who have already passed and those who have appeared for the final semester / year examination during April / May 2010 with the said eligibility may apply for MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010, for admission to M.C.A. degree Programme.

c) M.E., /. M.Tech., / M.Arch., Degree Programme :

I) A pass in B.E/, B.Tech./ B.Arch. Degree programme.

Ii) B.Pharm / B.Sc. (Agri./ Forestry/ Horticulture/ Fishery) degree programe.

Iii) Mater's Degree in the relevant branch of Science / Arts, which are prescribed.

Candidates with section 'A' & 'B' certificate holders and other similar certificate holder of professional bodies or societies (e.g. A.M.I.E.) recognised by the Ministry of Human Resource Development, Govt. of India are consider to be equivalent to B.E./B.Tech. Degree programme only with 2 years industrial experience in the relavant field after successful completion of the course. An experience certificate is to be produced by the candidate.

Other state Candidates can write the Common Entrance Test, but eligibility conditions will be fixed by the admitting authorities.

2.2 **Permission to appear for the Common Entrance Test is only an enabling provision and does not mean that the candidate satisfies all the requirements stipulated for admission to the MBA / MCA / M.E/ M.Tech/ M.Arch courses as listed above.**

3.0 DETAILS OF ENTRANCE TEST, HALL TICKET AND MARK SHEET

3.1 The application form (Data Sheet) is common for MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test. Candidates have to submit one application form only. The application form (Data sheet) for MBA / MCA / M.E/ M.Tech/ M.Arch can be obtained in person on payment of Rs.50/- (Rupees Fifty only) by cash from the Consortium office and MBA / MCA / M.E / M.Tech / M.Arch member colleges of the consortium (Refer Website : www.tnsfoconsortium.org) or can be obtained by post by sending a requisition letter (written in english with clear address, Pincode & Mobile Number) addressed to

The Secretary
MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010
Consortium of Self-Financing Professional, Arts and Science Colleges in Tamilnadu,
New No.29, Ganapathy Street, Royapettah, Chennai-600 014.

along with demand draft for Rs.100/- (Rupees One Hundred only) drawn in favour of **"Consortium of Self Financing Professional, Arts and Science Colleges in Tamilnadu" payable at Chennai.**

3.2 Detailed instructions and guidelines to file applications for appearing in the Common Entrance Test are given in Section 6.

3.3 The Hall ticket must be brought to the Examination hall and produced for verification.

3.4 Schedule of MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test is as follows :

SCHEDULE OF MBA / MCA / M.E / M.Tech / M.Arch COMMON ENTRANCE TEST - 2010			
COURSE	**DATE**	**DAY**	**TIME**
MBA	**05.06.2010**	**Saturday**	**10.00 a.m. to 12.00 Noon**
MCA	**05.06.2010**	**Saturday**	**2.30 p.m. to 4.30 p.m.**
M.E.,/ M.Tech.,/M.Arch.,	**06.06.2010**	**Sunday**	**10.00 a.m. to 12.00 Noon**

3.5 The MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test Center will be indicated on the Hall Ticket.

3.6 Mark Sheet showing the marks scored by the candidates in the Common Entrance Test - 2010 will be mailed soon after the publication of results.

Mark Sheet must be produced by the candidates at the time of admission.

4.0 Details of MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010 Centers :

Refer Annexure - 1 for the list of MBA / MCA / M.E/ M.Tech/ M.Arch CET - 2010 Examination Centers

(Visit our consortium website www.tnsfconsortium.org for updated list of MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test - 2010 Centers)

4.1 Every effort will be made to comply with his/her choice of the Examination center for the MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test. However, for reasons like non-availability of seats, another center may be allotted for a few candidates. **In any case, a center once allotted cannot be altered.**

4.2 If an applicant does not receive the Hall Ticket, the same can be obtained from the examination centre of his / her choice after producing the relavant proof (Xerox copy of the MBA / MCA / M.E/ M.Tech/ M.Arch CET-2010 application form (Data sheet) and xerox copy of the demand draft) thereof.

4.3 Candidates will appear for the MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test at the allotted Centres at their own cost and risk.

5.0 DETAILS OF QUESTION BOOKS AND ANSWER SHEETS

5.1 Syllabus for Entrance Test

a) M.B.A. Degree Programme :

The Question paper will be of 5 parts with the following topics

Part 1 : To evalute the candidate's ability to pick out critically the data and apply the data to business decisions from given typical business situations.

Part 2 : To evalute the skill of the candidate in answering questions based on the passages in the comprehension.

Part 3 : To evalute the skill on solving mathematical problems of graduate level including those learnt in plus two or equivalent level.

Part 4 : To test on determining data sufficiency for answering certain questions using data given plus the knowledge of Mathematics and use of day-to-day facts.

Part 5 : To test the knowledge on written English with questions on errors in usage, grammar, punctuation etc.,

Candidates are required to answer 100 objective type questions in 2 hours. Each question will be followed four probable answers. The candidate has to choose the correct answer and shade the appropriate box against the question in the answer sheet with HB Pencil.

b) MCA Degree Programme :

The question paper will be designed to test the capability of the candidates in the following areas :

1. Quantitative ability
2. Analytical reasoning
3. Logical reasoning
4. Computer awareness

There may also be a few questions on verbal activity, basic sciences etc. The question paper will have 100 objective type questions. each objective type question will have four probable answers. the candidate has to choose the correct answer and shade the appropriate box against the question in the answer sheet with HB pencil.

C) M.E / M.Tech / M.Arch Degree Programme :

As per the detailed syllabus given in Annexure 4.

5.2 Evaluation Scheme

While evaluating the answer, one mark is awarded for each correct answer. **No deduction will be made for incorrect answers and unanswered questions.**

The candidate is expected to attempt all the questions to secure the highest mark. In other words there is no choice among the questions.

The model questions are given in **annexure 2.** The candidate has to choose the correct answer and shade the corresponding box in the answer sheet with HB pencil for that question.

Wherever writing is involved use **"black ball point pen"** only.

A specimen answer sheet is given in annexure 3. By taking photo copies of this specimen answer sheet, you can practice yourself before appearing for the common Entrance Test.

During evaluation, the answer sheets are fed into a scanner. The shaded information are captured by the scanner and the details are transferred to computer for evaluation. Even a small stray Pen / Pencil mark on the sheet will be captured by the scanner which may mislead the evaluation process. When you wish to make changes in the answer, erase the previous shading completely and shade the appropriate box. Shade the box fully so that alphabet printed inside completely disappears. Improper shading and light shading are likely to be missed by the scanner which may result in reduction of marks.

In more than one box is shaded for a question, it will be treated as wrong answer.

The candidates are advised to shade the boxes with HB pencil as this will helps them to make changes if they needed.

The candidates will not be permitted to take home the Question Book at the end of the MBA / MCA/ M.E / M.Tech / M.Arch Common Entrance Test.

6.0 Instruction and Guidelines to fill applications

Candidates desirous of appearing for the MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010 conducted by the Consortium should fill their applications in the prescribed format through any of the following two modes.

1. In the prescribed application format by post.

2. Online direct mode.

1. IN THE PRESCRIBED APPLICATION FORMAT BY POST.

I) The candidates have to fill in the application form (Data Sheet) given along with the information booklet.

ii) Send the completed application form (Data Sheet) along with the Examination fees in the form of a crossed demand draft for Rs.400/- (Rupees four Hundred Only) (Rs.200/- for tamil Nadu SC / ST candidates) drawn in favour of **"Consortium of Self Financing Professional, Arts and Science Colleges in Tamilnadu"** payable at **Chennai.** (Refer Table -1 of Page 7, for Fee particulars). The SC/ST candidates will have to enclose and attested xerox copy of their permanent community certificate card issued by competant authority along with the application.

If the Candidate is desirous to attend both MBA / MCA and M.E / M.Tech / M.Arch Common entrance Tests, he/she has to enclose and additional Common Entrance

Test fees in the form of a demand draft for Rs.800/- (Rupees Eight Hundred Only) (Rs.400/-for TamilNadu SC/ST candidates) along with the filled in application form (Data Sheet). (Refer Table - 1 of Page7, for Fee particulars.)

The completed application form (Data sheet) along with the enclosures should reach the following address **on or before 5.30 p.m. on 17.05.2010.** after processing, the hall tickets will be sent by post to the eligible candidates.

The Secretary
MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010
Consortium of Self - Financing Professional, Arts and Science Colleges in Tamilnadu,
New No.29, Ganapathy street, Royapettah, Chennai - 600 014.

2. ONLINE DIRECT MODE

Candidates residing outside Tamilnadu and who could not reach the application distribution center to file applications, may opt for this mode. the procedure is as follows:

I) Go to any internet browsing center

ii) Log on to www.tnsfconsortium.org

iii) Read the instructions throughly by downloading the **MBA / MCA / M.E / M.Tech / M.Arch COMMON ENTRANCE TEST- 2010** information brochure and follow the steps.

iv) For online registration of your application click on **MBA / MCA / M.E / M.Tech / M.Arch CET-2010 ONLINE APPLICATION**

v) Open the application format by clicking the **MBA / MCA / M.E / M.Tech / M.Arch CET-2010 ONLINE APPLICATION** and type required data. Verify whether all data are correctly entered.

vi) Submit the application by clicking the submit button at the bottom of the application format.

vi) After a short time, your filled in application along with an application number will appear on the computer monitor screen. Take a Printout of this application on a A4 size standard copier paper.

vii) Affix your recently taken colour passport size colour photograph on the application in the space provided for this purpose.

viii) Put your signature at the space provided for this purpose.

ix) Send the completed application form (Data sheet) along with the enclosures and a crossed demand draft **Rs.450/-** (Examination fee Rs.400/- and application fee Rs.50/-), Rs.250/- for Tamil Nadu **SC / ST candidates** (Examination fee **Rs.200/- and application fee Rs.50/- drawn in favour of "Consortium of Self Financing Professional, Arts and Science Colleges in Tamilnadu"** payable at chennai. (Refer Table -1 of Page 7, for Fee particulars).

The SC/ST candidates will have to enclose an attested xerox copy of their permanent community certificate card issued by competant authority along with the application.

If the Candidate is desirous to attend both MBA / MCA and M.E / M.Tech / M.Arch Common entrance Test, he/she has to enclose an additional common Entrance Test fees in the form of a demand draft for Rs.850/- (Rupees Eight Hundred and fifty Only) Rs.450/- for Tamil nadu SC/ST candidates) along with the filled in application form (Data sheet). (Refer Table - 1 of Page, 7, for Fee particulars).

x) The application must be sent to the following address so as to reach the Consortium Office on or before 5.30 p.m on 17.05.2010 :

The Secretary
MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010
Consortium of Self-financing Professional, Arts and Science college in Tamilandu,
New No.29, Ganapathy Street, Royapettah, Chennai - 600 014.

xi) On receipt of your application along with demand draft, processing will be done and the hall Ticket will be despatched by post to eligible candidates.

NOTE :

1. Candidates are requested to put a tick mark in the relevant boxes provided in the cover and also requested to write the six digit application number in the space provided for it.
2. Other State candidates will be classified only under 'OTHERS' as applicable.
3. Candidates are advised to post the completed application form (Data sheet) well in advance so that it will reach before the above specified date and time.
4. The Consortium will not be responsible for postal or any other delay. Applications received after the above said date and time will be summarily rejected.
5. **Candidates must write their Application Number and their Name on the back side of the Demand Draft, and also on the right hand top corner of all the xerox copies of certificates enclosed.**
6. Xerox copy of the filled in apllication form (Data sheet) and Demand Draft can be retained by the candidates for future reference.
7. Do not punch or staple the Data sheet. Do not fold, smudge or scribble on the Data sheet.
8. The Data sheet should be kept loosely and safely and sent in the same cover provided for this purpose.
9. All enclosures can be stapled together, but t**he Data sheet should be kept separately** in the same cover along with the enclosures.
10. The SC/ST candidates belonging to Tamilnadu desirous of availing fee concession should submit an attested xerox copy of the permanent community certificate card.
11. Individual Application form should be enclosed with prescribed fee (Refer Table 1)**. Bulk applications and DD with Bulk Amount will not be accepted.**
12. All the columns on both sides of the Application Form (Data sheet) must be filled without fail.
13. Xerox copies of the application Form (Data Sheet) should not be used.
14. The downloaded blank application from the Consortium Website should not be used.
15. For furhter Correspondence kindly quote your application number and contact phone number.

No Further Correspondence will be entertained on matters pertaining to the MBA / MCA / M.E/ M.Tech/ M.Arch Common Entrance Test - 2010.

STATUS OF APPLICATION FORM

Candidates can track the status of their applications through Consortium website www.tnsfconsortium.org by key in the application number or name of the candidate and date of birth as input.

TABLE 1: MBA /MCA/ M.E/ M.Tech/ M.Arch CET-2010 FEE PARTICULARS

Sl.No	NAME OF THE COURSE	TEST FEE IN RUPEES	
		Tamilnadu SC/ST	Others
1.	MBA	200	400
2.	MCA	200	400
3.	Both MBA and MCA	400	800
4.	MBA - Online registration (Examination Fee+Application Fee)	250	450
5.	MCA - Online registration (Examination Fee+application Fee)	250	450
6	Both MBA and MCA - Online registration (Examination Fee+Application Fee)	450	850
7.	M.E/ M.Tech/ M.Arch	200	400
8.	M.E/ M.Tech/ M.Arch Online registration (Examination Fee+Application Fee)	250	450
9.	Both MBA and M.E/M.Tech / M.Arch.	400	800
10.	Both MBA and M.E/ M.Tech/ M.Arch. Online registration (Exam Fee+Application Fee)	450	850

IMPORTANT DATES

1. Commencement of issue of Application Forms	:	01.05.2010
2. Last Date of Issue of Application Forms	:	11.05.2010
3. Last Date for the Submission of filled in application Forms	:	17.05.2010
4. Date of MBA/MCA Common Entrance test - 2010	:	05.06.2010
5. Date of M.E.,/M.Tech.,/M.Arch Common Entrance test - 2010	:	06.06.2010
6. Publication of Results	:	23.06.2010

CHECK LIST TO BE VERIFIED BEFORE SUBMISSION OF THE APPLICATION FORM (DATA SHEET)

- ☐ Data sheet completely filled with all details
- ☐ Common Entrance Test Fee as a Crossed Demand draft drawn in favour of "CONSORTIUM OF SELF-FINANCING PROFESSIONAL, ARTS AND SCIENCE COLLEGES IN TAMILNADU" payable at CHENNAI enclosed.
- ☐ Application number and Name of the candidate written on the backside of the crossed Demand Draft.
- ☐ Photo copy of proof of date of birth enclosed.
- ☐ Attested xerox copy of their permanent community certificate card issued by competant authority of Government of Tamil Nadu, Minority Certificate (if any) is enclosed.
- ☐ Application number and Name of the candidate written on the top right hand corner of all the copies of enclosed Certificates.

ANNEXURE - 1
MBA / MCA / M.E / M.Tech / M.Arch Common Entrance Test - 2010 Centers

Code No.	(I) ENGINEERING COLLEGES
101	Sathyabama University, Jeppiaar nagar, Chennai-600 119
102	Adhiparasakthi College of engineering, Kalavai - 632 506
103	Adhiparasakthi Engineering College, Melmaruvathur - 603 319
104	Adhiyamaan College of engineering, Krishnagiri Dt., Hosur - 635 319
105	Anand Institute of Higher technology, Kazhiputtur, Chennai -603 103
106	Annai mathammal sheela Engineering college, Erumpatty P.O., Namakkal Dt., - 637 013
107	Arulmigu Meenakshi Amman Engineering College, Vadamavandal, Namandi post - 604 410
108	Arunai Engineering College, Mathur, Tiruvannamalai - 606 603
109	Bannari amman Institute of Technology, Alatukombai post, sathyamangalam - 638 401 Erode Dist.
110	C.Abdul Hakeem college of Engg.&Technology, Melvisharam - 632 509.
111	Dhaanish ahmed College of Engineering, Vanchuvancherry, Padappai, chennai - 601 301
112	Dhanalakshmi College of Engineering, Varadarajapura PO, Chennai 601 301
113	Dhanalakshmi Srinivasan College of Engineering and Technology, Mamallapuram, Chennai -603 104
114	Dhanalakshmi Srinivasan Engineering College, Perambalur - 621 212
115	DMI College of Engineering, Nazarethpet PO, chennai - 602 103
116	Dr.Navalar Nedunchezhiyan College of Engineering thozhudur - 606 303
117	Dr. Pauls Engineering college, Villupuram - 605 109
118	Easwari Engineering College, Ramapuram Chennai - 600 089
119	EGS Pillai Engineering College, Nagapattinam - 611 002
120	Er Perumal Manimekalai College of Engg. Hosur -635 117
121	Erode Sengunthar Engineering College, Erode - 638 057
122	Excel Engineering College, new Pallakkapalayam Village, Komarapalayam - 637 303
123	Francis Xavier Engineering College, Vannarpettai, Tirunelveli - 627 003
124	G.K.M. College of Engineering & Technology, Mappedu road, Chennai 600 063
125	Ganadipathy tulsi's Engineering College, Vellore - 632 102
126	Gnanamani College of Technology, Namakkal Dt. - 637 018
127	Infant Jesus College of Engineering, Tuticorin - 628 851
128	J.J.College of Engineering & Technology, Madurai road, Trichy - 620 009
129	Jaya Engineering College, Tiruninravoor, Chennai - 602 024
130	Jayam College of Engineering & Technology, Dharmapuri Dt. - 636 813
131	Jeppiaar Engineering College, Rajiv Gandhi Road, Chennai - 600 119
132	Jerusalem College of Engineering, Pottapalayam - 630 611
133	K.L.N. College of Engineering, Pottpalayam - 630 611
134	K.S.R. College of Engineering, Thokkavadi PO, Tiruchengode - 637 209
135	K.S.Rangasamy College of Technology, Tiruchengode - 637 209
136	Karpaga Vinayaga College of Engineering and Technology, Madhuranthagam Taluk - 603 308
137	Karpagam College of Engineering, Othakkal Mandapam PO, Coimbatore - 641 032

Code No.	
138	KCG College of Technology chennai - 600 097.
139	Krishnasamy College of Engineering & Technology, Nellikuppam - 607 109
140	M. Kumarasamy College of Engineering, Thalavapalayam, Karur - 639 113
141	M.P.Nachimuthu M.Jaganathan Engg. College, Chennimalai, Erode - 638 112
142	Madha Engineering College, Kunrathur, Chennai - 600 069.
143	Maharaja Engineering College Coimbatore - 641 654
144	Maharaja Insittute of technology, Coimbatore - 641 407
145	Maharaja Prithvi Engineering College,Coimbatore - 641 654
146	Mahendra Engineering College,, Vadugapalayam PO, tiruchengode - 637 503
147	Mailam Engineering College,, Mailam, tindivanam - 604 304
148	Meenakshi College of Engineering, Chennai - 60 078
149	Misrimal Navajee Munoth jain Engineering College,, Chennai - 600 097
150	Mohamed Sathak Engineering College, Kilakarai - 623 806
151	Muthayammal Engineering College,Kakkveri PO, Namakkal - 637 408
152	Narayana Guru College of Engineering Manjalumoodu, Kanyakumari - 629 151
153	National Engineering College, K.r.Nagar, Kovilpatti - 628 503
154	Nehru College of Aeronautics & Applied Sciences, Coimbatore - 641 008.
155	P.S.R. Engineering College, Sivakasi - 626 140
156	Paavai Engineering College,, Pachal, Namakkal - 637 018
157	Pallavan College of Engineering, Thimmasamudhram, Kancheepuram - 631 502
158	Panimalar Engineering College,, Nazarethpettai, Chennai - 602 103
159	Park College of engineering and Technology, Kaniyur, Coimbatore - 641 659
160	Pavendar Bharathidasan College of Engineering and Technology, Mathur, Trichy - 620 024
161	PET Engineering College, Vallioor, Tirunelveli Dt. 627 117
162	Priyadarshini Engineering College,, Vaniyamapadi - 635 751
163	PSNA College of Engineering & Technology, Dindigul - 624 622
164	R.M.D. Engineering College,, Gummudipoondi - 601 206
165	R.M.K. Engineering College, Gummudipoondi - 601 206
166	R.V.S. College of Engineering & Technogloy, Karur road, dindigul - 624 005
167	Raja College of Engineering & Technology, Madurai - 625 020
168	Rajalakshmi Engineering College, Thandalam, Chennai - 602 105
169	S.S.M College of Engineering Komarapalayam, Namakkal - 638 183
170	S.A. Engineering College, Thiruverkadu, Chennai - 600 077
171	S.K.R. Engineering College,Poonamallee, Chennai - 602 103
172	S.R.R. Engineering College,Rajiv Gandhi road, Chennai - 603 103
173	S.Veerasamy Chettiar College of Engg., & Technology, Puliyangudi, tirunelveli - 627 855
174	Sakthi mariamman Engineering College, Thandalam, Chennai - 602 105
175	Sapthagiri College of Engineering, Periyanahalli, Dharmapuri - 635 205
176	Saranathan College of Engineering, Trichy - 620 012
177	Sasurie College of Engineering, Vijayamangalam, Perundurai - 638 056
178	SCAD College of Engineering & Technology, Cheranmadhadevi, Tirunelveli - 627 414

Code No.	ENGINEERING COLLEGES
179	Sengunthar Engineering College, Thiruchengode - 637 205
180	Shree Motilal Kanhaiyalal Fomra Institute of Technology Kelampakkam, Chennai - 603 103
181	SNS College of Technology, Coimbatore - 641 035
182	Sree Sastha Institute of Engineering and Technology, Chembarambakkam, 602 103
183	Sri Muthukumaran Institute of Technology, Kunrathur High Road, Chennai - 600 069
184	Sri Nandhanam & Technology, Tirupattur - 635 601
185	Sri Sairam Engineering, West Tambaram, Chennai - 600 044
186	Sri Venkateswara College of Enghineering & Technology, Tirupachur - 631 203
187	Srinivasan Engineering College, Perambalur - 621 212.
188	Sriram Engineering College, Veppampattu - 602 024
189	St.Joseph's College of Engineering, Rajiv Gandhi Road, Chennai - 600 119
190	St. Michael College of Engineering & Technology, Kalayarkoil, Sivagangai - 630 551
191	Sun College of Engineering and Technology, Erachakulam PO, Kanyakumari Dt. - 629 902
192	Shree Venkateswara Hi-Tech Enng.College, Gobichettipalayam - 638 455
193	T.J. Institute of Technology, Karapakkam, Chennai - 600 097
194	Tagore Engineering College, Vandalur PO, Chennai - 600 048
195	Tamilnadu College of Engineering, Karumathampatty, Coimbatore - 641 659
196	Thangavelu College of Engineering, Karapakkam, Chennai - 600 097
197	The Rajaas College of Engineering, Vadakangulam, Tirunelveli - 627 116
198	Thirumalai College of Engineering, Kilambi, Kancheepuram Dt., - 631 551
199	Thiruvalluvar College of Engineerin and Technology, Vandavasi - 604 505
200	Udaya School of Engineering, Ammandivilai post, Kanya Kumari district - 629 204
201	Vailiammai Engineering College, Kattankulathur - 602 203
202	Vel Sri Rangarajan Sakunthala College of Multimedia, Avadi, Chennai -600 062
203	Velammal Engineering College, Surapet,Chennai - 600 066
204	Vins Christian College of Engineering, Nagercoil - 629 807
205	Vivekandandha College of Engineering for Women, Elayampalayam, Namakkal Dt. - 637 205
	(II) ARTS, SCIENCE AND MANAGEMENT COLLEGES (only MBA /MCA)
206	Adaikalamatha College, Arun Nagar, Vallam, Thanjavur - 613 403
207	Arignar Anna Institute of Management Studies & Computer Application, Sriperumbudur, Chennai - 602 105
208	Cauvery College for Women, Trichirappalli District - 620 018
209	Cherraan's Arts Science College, Kangayam - 638 701
210	Coimbatore Inst. of management & Tech., Coimbatore - 641 109
211	DJ Academy for Managerial Ecellence, Coimbatore - 641 032
212	Dhanalakshmi Srinivasan College of Arts & Science for Women, Perambalur - 621 212
213	Dr.G.R.Damodaran College of Science, Coimbatore - 641 014
214	Dr.SNS Rajalakshmi College of Arts & Science, Coimbatore dt. - 641 006
215	Guruvayurappan Inst. of Management, Coimbatore - 641 105
216	Indira Institute of Computer Applications, VGR Nagar, VGR Garden, Pandur - 631 203
217	JJ College of Arts and Science, Pudukkottai - 622 404
218	Jamal Mohamed College, Trichirappalli - 620 020
219	K.S.R College of Arts and Science, Thiruchengode - 637 209
220	Karapagam Arts and Science College, Coimbatore - 641 021.

Code No.	
221	Maharaja Arts & Science College, coimbatore - 641 407
222	Maharaja College for Women Perundurai, Erode Dist, 638 052
223	Mohamed Sathak College of Arts and Science, Sholinganallur, Chennai - 600 119
224	Muthayammal College of Arts & Science, Namakkal dist. - 637 408
225	Nadar Saraswathi College of Arts & Science, Theni Dist. - 625 531
226	National Institute of Management Studies, Chennai - 600 096
227	Nehru College of management, Coimbatore - 641 105
228	Park's College, Tiruppur - 641 605
229	PKR arts College for women, Gobichettipalayam - 638 476
230	Ponniyah Ramajayam College, Thanjavore - 614 904
231	Prathyusha Institute of Technology and Management, Aranvoyalkuppam - 602 025
232	Prof.Dhanapalan College for Women, Kanchipuram Dt. 603 103
233	RL Institute of Management Studies, Madurai - 625 002
234	RVS College of Arts & Science, Coimbatore - 641 402
235	S.Vellaichamy Nadar College, Madurai - 625 019
236	Sacred Heart College, Tirupattur - 635 601
237	Sankara College of Science and Commerce, Coimbatore - 641 035
238	Sengunthar Institute of Management Studies, Namakkar Dt., 637 205
239	Sengunthar Arts & Science College, Thiruchengode - 637 205
240	Sree Saraswathi Thayagaraja College, Pollachi - 642 107
241	Sri Balaji Chockalingam Engineering College, Arni - 632 317
242	Shri Nehru Maha Vidyalaya College of Arts & Science, Coimbatore - 641 021
243	Shrimati Indira Gandhi College, Chatram Bust Stand, Tiruchirapalli - 620 002
244	SNR Sons College, Coimbatore - 641 006.
245	Sree Amman Arts and Science College, Erode Dt., - 638 102
246	Sri Saradha College, Tirunelveli dt - 627 011
247	Srimad Andavan Arts & Science College, Tiruchirappalli - 620 005
248	Tamilavel Umamaheswaranar Karanthai Arts College, Thanjavur - 613 002
249	Thanthai Hans Roever College, Perambalore Dt. - 621 212
250	The New College, Chennai - 600 014
251	The Tahssim Beevi Abdul Khader College for Women, Kilakarai - 623 517
252	Theivani Ammal College for Women, Villupuram - 605 602
253	VLB Janakiammal College of Arts & Science, Coimbatore - 641 042
254	Valliammal College for Women, Chennai - 600 102
255	Vellalar College for Women, Erode - 638 009
256	Vels College of Science, Chennai - 600 117
257	Vidyasagar College of Arts & Science, Udamalpet - 642 126
258	Virudhunagar Hindu Nadar College of Management, Virudhunagar - 626 001
259	Vysya College, Salem - 636 103.

ANNEXURE - 2

MODEL QUESTIONS
MBA DEGREE PROGRAMME

SECTION -I : ANALYSIS OF BUSINESS SITUATION

This section contains lengthy passages. Read the passages and also the directions before answering the question that follow the passage. the questions are of two types.

1) Data evaluation questions.

2) Data application questions.

SECTION -II : READING SOLVING

This part contains reading passages. You have to read the passages carefully. Each passage will be followed by questions based on its contents. Choose the best answer to each question out of the four probable answers given.

SECTION -III : PROBLEM SOLVING

This part evaluates the skill on solving mathematical problems of graduate level including those learnt in plus two or equivalent level.

e.g. : a is thrice as good a workman as B.B takes 60 days more than A to finish a piece of work. The time in which they can do it working together is :

a) 25 days b) 30 days

c) 27 days d) 22 ½ days

SECTION -IV :DATA SUFFICIENCY

Each question will be followed by two statements (a) and (b). Your have to determine whether the data given in the statement are sufficient for answering the questions. use the data given, plus with your knowledge of mathematics and every day facts, to choose your answer.

SECTION -V : ENGLISH USAGE

In each of the sentences below, four words or phrases have been underline. Select the underlined part which contains an error in usage, grammar or punctuation.

e.g. : She informed me that she had been ill for sometime but that she hoped to be better by summer

(a) (b) © (d)

MODEL QUESTIONS

MCA DEGREE PROGRAMME

SECTION -I : QUANTITATIVE ABILITY

This section contains mathematical problems of graduate level including those learnt in plus two or equivalent leve.

e.g. : The sum of even numbers between 1 and 31 isl

a) 16 b) 128 c) 240 d) 512

SECTION -II : ANALYTICAL REASONING

This part contains problems which would test the analytical capability of the candidate.

e.g. : Find the next number, of 4,7,12,19_____

a) 26 b) 29 c) 27 d) 28

SECTION -III : LOGICAL REASONING

e.g. : If CHINA is written as 38126 and NEPAL, is 25769, how is PLAINE coded?

a) 971625 b) 769125 c) 796125 d) 679125

SECTION -IV : COMPUTER AWARENESS

e.g. : Which of the following was the first digital computer

a) UNIVAC b) ILLIAC c) VAZ II/780 d) ENIAC

SECTION -V : ENGLISH USAGE AND BASIC SCIENCE

This section consists of questions, that evaluate the knowledge of the candidate in English Language. Also questions will be asked on General Sciences

e.g. : Numismatcis is the study of

a) Numbers b)Coins and medals

c) Weights and Measures d) Calculators

ANNEXURE 3

Consortium of Self - Financing Professional, Arts and Science Colleges in Tamilnadu, Chennai - 14.

MBA / MCA / M.E., / M.Tech., / M.Arch., - COMMON ENTRANCE TEST - 2010

SPECIMEN ANSWER SHEET

Name of the Examination Centre	Answer Sheet Number

Signature of the Candidate :

Name of the Candidate :

I certify that I have verified the entries and shading of Register Number and the Candidate's Signature.

Signature of the Invigilator :

Name of the Invigilator :

Seal of the Examination Centre

Register Number

[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]
[5]	[5]	[5]	[5]	[5]	[5]	[5]	[5]	[5]	[5]
[6]	[6]	[6]	[6]	[6]	[6]	[6]	[6]	[6]	[6]
[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]	[7]
[8]	[8]	[8]	[8]	[8]	[8]	[8]	[8]	[8]	[8]
[9]	[9]	[9]	[9]	[9]	[9]	[9]	[9]	[9]	[9]
[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]

INSTRUCTIONS TO CANDIDATES

1. Use Ball Point Pen for writing the information. Use HB Pencil for shading inside the brackets as shown below :

Correct Method

Q. No.	Answers
1	[a] [■] [c] [d]

Wrong Method

Q. No.	Answers
1	[✓] [X] [●] [~~b~~]

2. Ensure your choice before shading, If you wish to change your choice erase the pencil shading completely and shade the new brackets.
3. Do not make any stray marks inside the answer brackets as the scanner will treat it as multiple shading.

Q.No.	Answers			
1	[a]	[b]	[c]	[d]
2	[a]	[b]	[c]	[d]
3	[a]	[b]	[c]	[d]
4	[a]	[b]	[c]	[d]
5	[a]	[b]	[c]	[d]
6	[a]	[b]	[c]	[d]
7	[a]	[b]	[c]	[d]
8	[a]	[b]	[c]	[d]
9	[a]	[b]	[c]	[d]
10	[a]	[b]	[c]	[d]
11	[a]	[b]	[c]	[d]
12	[a]	[b]	[c]	[d]
13	[a]	[b]	[c]	[d]
14	[a]	[b]	[c]	[d]
15	[a]	[b]	[c]	[d]
16	[a]	[b]	[c]	[d]
17	[a]	[b]	[c]	[d]
18	[a]	[b]	[c]	[d]
19	[a]	[b]	[c]	[d]
20	[a]	[b]	[c]	[d]
21	[a]	[b]	[c]	[d]
22	[a]	[b]	[c]	[d]
23	[a]	[b]	[c]	[d]
24	[a]	[b]	[c]	[d]
25	[a]	[b]	[c]	[d]

Q.No.	Answers			
26	[a]	[b]	[c]	[d]
27	[a]	[b]	[c]	[d]
28	[a]	[b]	[c]	[d]
29	[a]	[b]	[c]	[d]
30	[a]	[b]	[c]	[d]
31	[a]	[b]	[c]	[d]
32	[a]	[b]	[c]	[d]
33	[a]	[b]	[c]	[d]
34	[a]	[b]	[c]	[d]
35	[a]	[b]	[c]	[d]
36	[a]	[b]	[c]	[d]
37	[a]	[b]	[c]	[d]
38	[a]	[b]	[c]	[d]
39	[a]	[b]	[c]	[d]
40	[a]	[b]	[c]	[d]
41	[a]	[b]	[c]	[d]
42	[a]	[b]	[c]	[d]
43	[a]	[b]	[c]	[d]
44	[a]	[b]	[c]	[d]
45	[a]	[b]	[c]	[d]
46	[a]	[b]	[c]	[d]
47	[a]	[b]	[c]	[d]
48	[a]	[b]	[c]	[d]
49	[a]	[b]	[c]	[d]
50	[a]	[b]	[c]	[d]

Q.No.	Answers			
51	[a]	[b]	[c]	[d]
52	[a]	[b]	[c]	[d]
53	[a]	[b]	[c]	[d]
54	[a]	[b]	[c]	[d]
55	[a]	[b]	[c]	[d]
56	[a]	[b]	[c]	[d]
57	[a]	[b]	[c]	[d]
58	[a]	[b]	[c]	[d]
59	[a]	[b]	[c]	[d]
60	[a]	[b]	[c]	[d]
61	[a]	[b]	[c]	[d]
62	[a]	[b]	[c]	[d]
63	[a]	[b]	[c]	[d]
64	[a]	[b]	[c]	[d]
65	[a]	[b]	[c]	[d]
66	[a]	[b]	[c]	[d]
67	[a]	[b]	[c]	[d]
68	[a]	[b]	[c]	[d]
69	[a]	[b]	[c]	[d]
70	[a]	[b]	[c]	[d]
71	[a]	[b]	[c]	[d]
72	[a]	[b]	[c]	[d]
73	[a]	[b]	[c]	[d]
74	[a]	[b]	[c]	[d]
75	[a]	[b]	[c]	[d]

Q.No.	Answers			
76	[a]	[b]	[c]	[d]
77	[a]	[b]	[c]	[d]
78	[a]	[b]	[c]	[d]
79	[a]	[b]	[c]	[d]
80	[a]	[b]	[c]	[d]
81	[a]	[b]	[c]	[d]
82	[a]	[b]	[c]	[d]
83	[a]	[b]	[c]	[d]
84	[a]	[b]	[c]	[d]
85	[a]	[b]	[c]	[d]
86	[a]	[b]	[c]	[d]
87	[a]	[b]	[c]	[d]
88	[a]	[b]	[c]	[d]
89	[a]	[b]	[c]	[d]
90	[a]	[b]	[c]	[d]
91	[a]	[b]	[c]	[d]
92	[a]	[b]	[c]	[d]
93	[a]	[b]	[c]	[d]
94	[a]	[b]	[c]	[d]
95	[a]	[b]	[c]	[d]
96	[a]	[b]	[c]	[d]
97	[a]	[b]	[c]	[d]
98	[a]	[b]	[c]	[d]
99	[a]	[b]	[c]	[d]
100	[a]	[b]	[c]	[d]

ANNEXURE - IV

SYLLABI FOR THE ENTRANCE TEST - M.E., / M.Tech., / M.Arch.,

PART – I

ENGINEERING MATHEMATICS (Common to all Candidates)

Determinants and Matrices: Solving system of equations _Rank of the Matrix – Eigenvalues and eigenvectors – Reduction of quadratic form to canonical form.

Calculus and Differential Equations: Partial derivatives – Jacobians – Taylor's expansion – Maxima and Minima. Linear ordinary differential equations with constant coefficients – Simultaneous first order linear equations with constant coefficients. Formation of partial differential equation (PDE) – Solution of first order PDE – Solution of linear higher order PDE with constant coefficients.

Vector Calculus: Double and triple integrations and their applications – Gradient, Divergence, Curl and Laplacian – Green's, Gauss divergence and Stroke's theorem.

Fuctions of Complex Variables and Complex Integration: Analytic functions – Conformal Mapping- Bilinear transformation – Cauchy's integral theorem and integral formula – Taylor and Laurent Series – Singularities – Residues – Residue theorem and its applications.

Transforms: Lap lace Transform – Inverse transforms – Application to solution of linear ordinary differential equations with constant coefficients. Fourier integral theorem – Fourier transform pair – Sine and Cosine transforms. – Transform – Inverse Z-transform – Solution of difference equations using Z-transform.

Numerical Methods: Solution of Linear system by direct and iterative methods – Interpolation and approximation – Numerical Differentiation and Integration - Solving Ordinary Differential Equations.

Applied Probability: Probability and Random variables – Standard Discrete and Continuous distribution – Moments – Moment generating function and their properties. Two-Dimensional Random Variables – Covariance – Correlation and Regression.

PART – II

BASIC ENGINEERING & SCIENCES (Common to all Candidates)

Applied Mechanics: Law of Mechanics – Lame's theorem – Forces, Moments and Couples – Displacement, velocity and Acceleration – Friction – Moment of Inertia.

Mechanical Engineering: Laws of thermodynamics – Open and closed systems – Equation of state – Heat and Work.

Physics: Sound – Latices – Ultrasonic flaw detector – X-ray radiography – Interference Fringes- Planck's quantum theory – Laser and Fibre Optics.

Material Science: Fracture – Magnetic and Dielectric materials – Conductor and Semi conductor materials – Ceramic and Super conductor materials.

Civil Engineering : Fluid Statics and Dynamics – Boundary Layer – Pumps and Turbines – Environmental Pollution.

Electrical Engineering : Ohm's Law – Kirchoff's Law – A.C. Circuits – D.C. Machines – Transformers – Synchronous machines – Instrumentation.

Computers: Computer organization – Architecture – Arrays – Pointers – User defines function – C program.

Chemistry: Adsorption – Chromatography – Chemical kinetics – Electrochemistry – Spectroscopy – Fuels and Combustion.

PART – III
1. CIVIL ENGINEERING & GEO INFORMATICS

Structural Engineering Division: Mechanics: Stress-Strain Relationships – Principal stresses and Principal strain in two dimension and three dimension. Composite Bars – Composite Beams – Elastic Constants. Beams and Bending –Shear Force and Bending Moment Diagrams – Flexural and Shear Stresses. Slope and Deflection of Beams. Thin and Thick Cylinders. Theories off Failure – Unsymmetrical Bending – Curved Beams – Theories of Columns. Combined Direct and Bending Stresses. Strucutural Analysis: Static and Kinematic Indeterminancy – Energy Principles – Deflection of pin jointed plane frames – rigid frames. Classical Method of Analysis of Indeterminate structures (Slope deflection and Moment Distribution) – Matrix Method. Arches and Suspension Bridges – Influence. Line for Determinate and Indeterminate Structures. Plastic Analysis of Structures.

Building Materials: Cement – Concret – properties of ingredients – Mix Design – Quality Control – Special Concrete – Concreting Methods – Brick – Brick Masonry – Stone – Timber – Steel.

Concrete Structures: Design Methods – Limit State Design for beams, slabs, columns and footings – retaining walls – Water Tanks, Prestressed Concrete – Principles – Methods – Losses – Deflection – Design.

Steel Structures: Steel Sections – Connections – Design of Tension and Compression Members – Beams, Column Bases – Plate Girders and Trusses.

Soil Mechanics and Foundation Engineering: Soil Mechanics: Nature of soll – phase relationships – Soil classification: Soil water – static pressure –effective stress principle: permeability – seepage: Stress distribution in soil – Consolidation (Trzaghi's one dimension consolidation theory): Compaction shear strength of soil – Mohr – Coulomb theory – determination of shear strength by different methods: slope stability analysis – protection measures.

Foundation Engineering: Site investigation - Scope and objectives – drilling techniques – depth and spacing of boreholes – sampling Techniques – penetration tests (SPT and SCPT) – plate load test – selection of foundation: Foundation types – shallow foundation – bearing capacity (Terzaghis Theory and BIS formula) – allowable bearing pressure – bearing capacity from field tests – settlement of foundation – allowable settlement – Codal provisions: Design of foundations – Isolated, combined and raft foundations: Pile foundations- static and dynamic pile driving formulae (Engineering News and Hiley method) – Pile groups – capacity and settlement – Codal provisions – pile load test – negative friction of piles: Earth pressure theories – Earth pressure on retaining walls – stability analysis of retaining wall.

Transportation Engineering: Highway Planning: Road Classification, Geometric Design of Highways, Construction of Earth, WBM, Bituminous and concrete roads, Design of flexible and rigid pavements. Drainage of roads, maintenance of roads.

Railways, Airways, Docks and Harbour Planning: Railway alignment, components of permanent way, geometric design Airport planning, components of airport, site selection,

planning for terminal building runways. Harbour planning, components of harbour, inland water transport.

Traffic Engineering: Traffic characteristics, Traffic surveys, Traffic Signals, Road markings and signs.

Water Resources Engineering: Fluid Mechanics and Hydraulics: Propertis of fluids. Fluid statics and relative equilibrium. Basic concepts of fluid flow-kinematics and dynamics. Concept of system and control volume application to continuity, momentum and energy equations. Dimensional analysis and model studies. Laminar and turbulent flow through pipes. Boundary layers. Steady uniform and gradually varied flow in open channels. Rapidly varied flow. Turbines and pumps and positive displacement pumps.

Hydrology and Ground Water : Hydrometeorology. Hydrologic cycle. Precipitation and its measurements. Abstractions. Runoff estimation. Hydrograph analysis. Unit Hydrograph. Hydrologic extremes floods and droughts. Rainwater harvesting. Properties of aquifer. Groundwater development. GEC norms. Well hydraulics. Steady and unsteady flows. Ground water quality.

Irrigation Engineering: Irrigation system. National water policy. Components of irrigation network. Design of lined and unlined channels. Waterways, head works, gravity dams and spillways. Design of weirs on permeable foundation. Soil water relations. Crop water requirements. Irrigation scheduling and methods. Dury, delta and base period. Irrigation water quality, Irrigation water management. Participatory approach.

Environmental Engineering: Water and Waste water Engineering: Water requirements: water demand, quality standars: Development of water supply source, conveyance system: basic unit processes and operations for water treatment: water distribution: sewage characteristics: sewage treatment, primary and secondary treatment of sewage, sludge disposal, sewage disposal. Air Pollution and Control: Types of Pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits.

Noise Pollution and Control: Impacts f noise, permissible Limits of noise pollution, measurement of noise and control of noise pollution.

Surveying And Remote Sensing: Surveying: Chain survey-traversing-plotting: compasses-bearings-plane table-leveling – bench marks-temporary and permanent adjustments-reduction: contouring and volumes – theodolites – Gale's table-lay out – setting out works-curve ranging-mine surveying- techeometric survey-triangulation-base line - corrections – trigonometric leveling – errors and sources classification or errors – equation – level nets – astronomical survey – practical astonomy – photogrammetry – EDM-hydrographic survey – river.

Electronic survey – infrared EDM-microwave system-modern positioning systems-trilateration.

Remote Sensing: Satellite system – EMR interaction with each feature, spectral signature – image characters – interpretation keys – Image enhancement, filters, classification – accuracy assessment – thematic maps.

GIS and Cartography: Cartography-map projection-map design-map compilation-generalization-map production-software and hardware GIS-data types-data base types-raster and vector-topology-data input-data analysis-DEM and TIN-data output-applications.

2. EARTH SCIENCES

Physical Geology and Geomorphology: Weathering Process, kinds, products. Internal structure of the earth, fundamentals of plate tectonics. Landforms produced by River, winds, glacier and sea. Drainage pattern, Drainage Index, Geomorphic features.

Mineralogy, Petrology, Stratigraphy, Paleontology and Structural Geology: Physical properties of Industrial minerals classification, orgin and description of Igneous, sedimentary and Metamorphic rocks. Orgin of Himalayas major earth geological events through time scale. Origin of life, types of fossils evolution of mammals & Man. Joints, Folds, Faults and structures.

Economic Geology, Ore Geology, Geochemistry: Origin, occurrence and distribution of Economic mineral deposits-Iron, manganese, gold, zinc, graphite, lead, coal and petroleum deposits. Ore-dressing, ore-reserves, estimation. Major elements, application in environmental studies REE-its, implication in genesis/ provenance of rocks.

Remote Sensing, Geophysics and Hydrogeology: Sensors & Platforms-Indian Remote Sensing – Spectral system characterizes of rocks & minerals – Photogeology – Photogrametry – Hydrogeology – Groundwater – occurrence, movement, Aquifer, field parameters & Lab methods of estimations.

Engineering Geology, Environment Geology and Marine Geology: Engineering properties of Rock. Geological investigation required for Dam, Tunnel Highways and Building constructions. Renewable and non – renewable resources, pollution. Continental and marine environmental studies. Ocean features, Physical Chemical & Biological resources of the ocean.

3. MECHANICAL, AUTOMOBILE & AERONAUTICAL ENGINEERING

i) **Mechanics:** Statics of Particles, Equilibrium of Rigid Bodies, Properties of Surfaces and Solids, Dynamics of Particles, Friction and Elements of Rigid Body Dynamics – Basics of Mechanisms, Kinematics of Linkage, Mechanisms, Kinematics of Cam Mechanisms, Gears and Gear and Trains, Friction, Force Analysis, Balancing and Vibration.

ii) **Strength of Materials and Design:** Stress, Strain and Deformation of Solids, Transverse Loading on Beams and Stresses in Beams, Deflection of Beams, Energy Principles, Thin cylinders and spherical resells Torsion – Fundamentals of Design for Strength and Stiffness of Machine Members, Design of Shafts and Couplings, Design of Fasteners and Welded Joints, Design of Springs and Engine Parts, Design of Engine parts, Bearings and Flywheels, Desing of Transmission System for Flexible Elements, Spur Gears and Parallel Axis Helical Gears, Bevel, Worm Gears and Crossed Helical Gears, Design of Gear Boxes, Design of Cam, Clutches and Brakes.

Material Science and Metallurgy: Constitution of Alloys and Phase Diagrams, Heat Treatment, Ferrous and Non ferrous Metals, Non-Metallic Materials, Mechanical Properties and Testing, Crystal Defects and Strengthening of Materials Conducting and Semi conducting Materials, Magnetic and Dielectric Materials, Nuclear Physics, Superconducting and New Engineering Materials.

Thermodynamics: Basic Concepts and First Law, Second Law, Entropy and Availability, Properties of Steam, Psychometric, Ideal and Real Gases and Thermodynamic Relations, Fuels and Combustion – Gas Power Cycles, Stream Turbines, Internal Combustion Engines, Internal Combustion Engines Testing and Performance, Gas Turbines – Steam Nozzle, Air Compressor, Refrigeration and Air-Conditioning, Boilers, Cogeneration and Waste Heat Recovery.

Heat Transfer: Conduction, Phase Change Heat Transfer and Heat Exchangers, Radiation, Mass Transfer Refrigeration Cycle, Refrigerants, System Components and Balancing, Psychrometry, Air Conditioning Systems, Unconventional Refrigeration Cycles.

Production Technology: Foundry Technology, Hot & Cold Working, Forging, Advances in Forming Process, Principles and Applications of Joining Processes, Theory of Metal Cutting, Centre Lathe and special Purpose Lathes, Reciprocating Machines, Milling Machines and Gear Cutting, ABRASIVE Process, Broaching, CNC Machine Tools and Part Programming.

Automotive Engines: Engine Construction and Operation, SI Engine Fuel System, Cooling and Lubrication System, Combustion Chambers, Two Stroke Engines, Diesel Engine Basic Theory, Fuel Injection System, Air Motion, Combustion and Combustion Chambers, Supercharging and Turbo charging, Diesel Engine Testing and Performance.

Automotive Transmission and Pollution: Clutch and Gear Box, Hydrodynamic Drive, Planetary Gear Boxes, Automatic Transmission Applications, Hydrostatic and Electric Drive – S.I. Engine Combustion and Emissions, CI Engine Combustion and Emissions, Control Techniques for Reduction of SI and CI Engine Emission, Test Procedure & Instrumentation for Emission Measurement and Emission Standards.

Aerodynamics: Basic Fluid Mechanics, Two Dimensional Inviscid Incompressible Flow, Airfoil Theory, Subsonic Wing Theory, Laminar and Turbulent Flow, Fundamental Aspect of Compressible Flow, Shock and Expansion Waves, Two Dimensional compressible Flow, High speed flow over Airfoils, Wings and Airplane Configuration.

Aerospace Propulsion: Fundamentals of Gas Turbine Engines, Subsonic and Supersonic Inlets for Jet Engines, Centrifugal and Axial Flow Compressors, Combustion Chambers for Jet Engines, Turbines for Jet Engines, Nozzles for Jet Engines, Ramjet Propulsion, Hypersonic Airbreathing Propulsion, Chemical Rocket Propulsion, Advanced Propulsion Techniques.

4. ELECTRICAL & ELECTRONICS ENGINEERING AND INSTRUMENTATION ENGINEERING

Electrical Circuits and Fields: KCL, KVL, Nodal & Mesh analysis, transient response of D.C and A.C networks: sinusoidal steady-state analysis: resonance in electrical circuits: concepts of ideal voltage and current sources, network theorems, driving point admittance and transfer functions of two port network, three phase circuits: Fourier series and its application: Gauss theorem, electric field intensity and potential due to point, line, plane and spherical charge distribution, dielecti, capacitance calucations for simple configurations: Ampere's and Biot-Savart's Law, inductance calculations for simple configurations.

Electrical Machies: Single phase transformer – equivalent circuit, phasor diagram, tests, regulation and efficiency: three phase transformer-connections: auto transformer: principles of energy conversion windings of rotating machines: D.C generators and motors – characteristics, starting and speed control armature reaction and commutation: three phase induction motors – performance characteristics, starting and speed control: single-phase induction motors: synchronous generators-performance, regulation, synchronous motors-starting characteristics, applications, synchronous condensers: fractional horse power motors: permanent magnet and stepper motors.

Power Systems: Electric power generation – thermal, hydro, nuclear: transmission line parameters, steady-state performance of overhead transmission lines and cables and surge propagation: distribution system, insulators, bundle conductors, corona and radio

interferences effects: per-unit quantities: bus admittance and impedence matrices: load flow: voltage control and power factor correction: economic operation: symmetrical components, analysis of symmetrical and usymmetrical faults: principle of over current, differential and distance protections: concepts and solid state relays and digital protection: circuit breakers: principles of system stability-swing curves and equal area criterion.

Control Systems: Principles of feedback: transfer function: block diagram: steady-state errors: stability-Routh and Nyquist criteria: Bode plots: compensation: root loci: elementary state variable formulation: state transition matrix and response for Linear time Invariant systems.

Power Electronics and Drives: Semiconductor power devices-diodes, transistors, thyristors, triacs, GTO, MOSFETs and IGBTs-static characteristic and principles of operation: triggering circuits: phase control rectifiers: bridge converters-fully controlled and half controlled: principles of choppers and inverters, basic concepts of adjustable speed dc and ac drives.

Digital Electronics: Digital Logic Theory: Number systems-Combinational logic circuits-Minimization of Boolean functions-IC families-Arithmetic circuits, Multiplexer & decoders-Sequential circuits-Flip flops, counters, shift registers, Schmitt trigger, timers and multivibrators.

Microprocessor: General 8 bit microprocessor Architecture-8085, 8086 processor – Architecture, Memory, I/O interfacing, Instruction set, Addressing modes, Timing diagram & delays, Machine cycles, Interrupts, counters, Assembly language programming.

Microcontrollers: 8 bit microcontroller – 8051 architecture, bus configuration, Instruction sets, programming & applications.

Digital Signal Processing: Analog signals-sampling & Aliasing-Discrete time signals & systems – LTI systems – Convolution sum-Difference equation representation – Z Transform & its Inverse-Discrete Fourier series & Fourier transform – Radix 2 FFT – Decimation in me and frequency- Inverse DFT using FFT-Analog Butterworth & Chebyshev filter design-IIR & FIR filter design and Realization.

Computer Control of Processes, Networks: State models and state equations-controllability & observability-pole assignment-discrete data system – state space representation-stability-data hold, Z & modified Z transform – Pulse transfer function – programmable logic controllers.

Data networks – switching OSI, Data link control, Media access protocol-BISYNC, SDLC, HDLC, CSMA/CD, TCP/IPBridges, routers, gateways, Ethernet and Arcnet configuration.

Communication Engineering : Modulation and demodulation systems – Types of transmission lines – losses – standing waves – Ground wave and space wave propagation – Digital communication concepts – Data Communication codes, serial and parallel interface – Network protocol – Types of satellites – Advantages of optical fibre communication.

Measurements, Instrumentation and Transducers: Measurement of R, L and C-BRIDGES POTENTIOMETERS & GALVANOMETERS – Measurement of voltage, current, power, power factor and energy- Instrument transformers, Q meter, Waveform Analyzers – Digital voltmeter, Multimeter – Time, Phase and frequency measurements – Oscilloscope – display and recording devices – Noise and interference in Instrumentation.

Industrial Instrumentation: Measurement of displacement, stress, strain, force, torque, velocity, Acceleration, Shock, Vibration, Humidity, Viscosity & density – Pressure, temperature, flow & level measurement.

Analytical Instrumentation: Spectro Photometers-Spectral methods of analysis-source detectors and applications-Ion conductivity – sampling systems, ion selective electrodes, conductivity and pH meters – Analyzers – Chromatography – NMR & X ray spectroscopy – GM and proportional counters Mass spectrometer.

Units and standards-Calibration methods-Errors-Transducer classification, static characteristics, mathematical mode, zero, I and II order transducers – Response to different inputs – variable Resistance, Inductance and capacitance transducers-Piezo electric, Magnetostrictive, IC and smart sensors – Digital, Fibre optic, Hall effect and feedback transducers.

5. ELECTRONICS AND COMMUNICATION ENGINEERING

Circuit Analysis: DC Circuit analysis, Thevenin's and Norton's equivalent circuits, Sinusoidal steady state analysis, Transient and resonance in RLC circuits.

Electronic Devices: Diodes, bipolar Junction Transistors, FET, MOSFET, UJT, Thyristor, Electronic Circuits: Small signal amplifers using BJT and FET Devices, Large signal amplifiers, Power supplies Feed back amplifiers, Oscillators, Pulse shaping circuits. Digital Electronics: Logic gates, Combinational Circuits, Sequential circuits. Linear Integrated Circuits: Operational amplifiers and its applications, PLL, Voltage regulators, A/D and D/A converters, Measurements and Instrumentation: Transducers, Digital Instruments, Display and Recording systems. Microprocessor and its applications: Microprocessors-8085 and 8086 architectures and interfaces, Micro-controller and applications.

Electromagnetic Fields: Static Electric and Magnetic fields, Time varying Electric and Magnetic fields, Maxwell equations. Transmission Lines and Networks: Transmission line equations, impedance matching, Filters. EM waves and waveguides: Guided waves, Rectangular and cylindrical waveguides. Antennas and Propagation: Aperture antennas, arrays, Propagation of radio waves, Microwave Engineering: Microwave tubes, semiconductor devices, Passive components, Microwave Measurements.

Communication Theory and Systems: AM, FM and PM, Sampling and Quantization, PCM, DM, ADM, Multiplexing. Digital Communication: Base band signaling, Band pass signaling, Error control coding, Spread spectrum techniques. Computer Communication Networks: Definition of layers, data link protocols, Network interconnection. Message routing technologies, End-End protocols. Optical Communication: Optical Fibers, Optical transmitters and receivers.

Signals and Systems: Continuous time signals and systems-Fourier Transform, Laplace transform, Discrete time signals and systems – DTFT, DFT, Z-Transform. Digital Signal Processing: IIR and FIR filters, Realization and implementation, Quantization effects. Control Systems: Transfer function, Time and frequency response analysis, Stability analysis, state variable analysis.

6. PRODUCTION AND INDUSTRIAL ENGINEERING

i) Basic Mechanisms and Elements of Design: Mechanisms, Friction, Gearing and Cams, Balancing, Vibration, Fundamentals of Design, Design of Basic Machine Elements, Design of Mechanical drives, Design of Automotive components, Recent Advances.

ii) Casting, Metal forming and metal joining processes: Casting Processes, Welding Processes, Special Casting Processes, Testing of Castings & Weldments – Fundamentals of Metal Forming, Forging and Rolling, Extrusion and Drawing Processes, Sheet Metal Forming Processes, Recent Advances, Mechanisms, Friction, Gearing and Cams, Balancing, Vibration, Fundamentals of Design, Design of Basic Machine Elements, Design of Mechanical drives, Design of Automotive components, Recent Advances.

Tool Engineering, Machine tool operation, Metrology and Inspection: Mechanics of Metal Cutting, Tool Material, Tool Wear and Tool Life, Gear Manufacture, Concept & Programming of CNC machines, Advanced CNC programming & Tooling – General Concepts of measurements, Linear and Angular measurements, Measurement of Surface Finish Measuring Machines, Metrology of Screw Thread & Gears, Computer Aided Inspection and Laser Metrology – Strength and rigidity of machine tool structures, Slideways, Spindles and spindle supports, Machine Tool Dynamics.

Engineering Materials, and Computer Aided Manufacturing: Introduction and Constitution of Alloys and Phase Diagrams, Heat Treatment, Ferrous and Non Ferrous Metals, Mechanical Properties and Testing, Welding and Foundry Metallurgy, Manufacturing Processes for Plastic, Mechanical, Chemical and Electro – chemical energy based processes, Electrical Energy based Waste Processes, Thermal Energy Process, Rapid Prototyping and Rapid Tooling – polymer Matrix Composites, Metal Matrix Composites, CERAMICS Matrix Composites, Advances in Polymers & Composites..

Product and Process Design, Design of Jigs and Fixtures and press Tools: Computer Aided Design, Computer Graphics Geometric Modeling, Product Design Concepts, Recent Advances, Process Planning, Estimating, Costing and Elements of Cost, Analysis of Overhead Expenses, Estimation of Costs for Forging, Casting and Welding, Estimation of Machine Time, Purpose Types and Functions of Jigs and Fixtures, Jigs, Fixtures, Press working Terminologies and Elements of dies and Strip Layout, Design and Development of Dies.

Operations Research: Linear Programming, LP Extensions, Networks, Inventory Models, Dynamic Programming, Decision Analysis, Game Theory, Waiting Line Models, Markov Processes.

Operations Management: Forecasting, Aggregate Planning, Capacity Management, Production Activity Control, Estimation and Costing, Product Cost Estimation, Software Cost Estimation, Costing Methods, Cost Analysis for Planning and Control.

Quality Control Reliability and Maintenance: Quality Concepts, Statistical Process Control, Process Capability Analysis, Advanced Control Charts, Acceptance Sampling, Reliability Concepts, Failure Data Modeling, Reliability Prediction and Modeling, Reliability Management, Risk Assessment, Maintenance Concept, Maintenance Models, Maintenance Logistics, Total Production Maintenance, Fault Diagnosis.

7. COMPUTER SCIENCE AND ENGINEERING AND INFORMATION TECHNOLOGY

Applied Probability and Operations Research: Random Processes, Probability Distributions, Queuing Models and Simulation, Testing of Hypothesis, Design of Experiments.

Discrete Mathematical Structures: Formal Language and Automata – Graph Theory.

Complier Design: Optimization – Code Generation – Implementation – Principles of Programming Languages – Programming Paradigms.

Operating Systems and System Software: Process Management, Storage Management, I/O Systems, Design and Implementation of LINUX OS, assemblers, Loaders, Linkers, Macro Processors.

Distributed Systems: Communication and Distributed Environment, Distributed Operating Systems, Distributed Shared Memory, Protocols, Fault Tolerance and Distributed File Systems, Distributed Object Based Systems.

Programming and Data Structures: Problem Solving Techniques, Trees, Hashing and Priority Queues, Sorting, Graph, Heap Search.

Algorithm Analysis and Design Techniques: Dynamic Programming, Greedy Algorithms, Advanced Algorithms, NP Completeness and Approximation Algorithms.

Microprocessors and Microcontrollers – Computer Architecture and Organization: Digital Fundamentals, Combinational Circuits, Synchronous and Asynchronous Sequential Circuits, Instruction Set Architecture (RISC, CISC, ALU Design), Instruction Level Parallelism, Processing Unit and Pipelining, Memory Organization.

Digital Signal Processing: FFT, Filter Design.

Computer Networks: Data Communication Systems, Applications.

Database Management Systems: Relational Model, Database Design, Implementation Techniques, Distributed Databases, Object Oriented Databases, Object Relational Databases, Data Mining and Data Warehousing.

Software Engineering Methodologies: Software Product and Processes – Software Requirements Management – Requirements Engineering, Elicitation, Analysis, Requirements Development and Validation, Requirements Testing – Object Oriented Analysis And Design – Modular Design, Architectural Design, User Interface Design, Real Time Software Design, System Design, Data acquisition System – Software Testing and Quality Assurance – SQA Fundamentals, Quality Standards, Quality Metrics, Software Testing Principles, Defects, Test Case Design Strategies, Software Quality and reusability, Software Project Management, Software Cost Estimation, Function Point Models, Software Configuration Management, Software Maintenance.

Artificial Intelligence: Intelligent Agents, Search Strategies, Knowledge Representation, Learning, Applications.

Mobile Computing: Wireless Communication Fundamentals, Telecommunication Systems, Wireless Networks.

Security In Computing: Program Security, Security in Operating Systems, Database and Network Security, Scientific Computing, Information Coding Techniques, Cryptography, Network Security.

8. CHEMICAL ENGINEERING, CERAMIC TECHNOLOGY AND BIOTECHNOLOGY

i) Fluid Mechanics and Particle Technology: Classification of fluids, flow patterns, manometry, continuity equation, Navier-Stokes equation, Bernoulli equation, Dimensional analysis, Flow through pipes, boundary layer concepts, Flow through fixed and fluidized beds, pumps – classification affinity laws, performance curves.

Characteristics of solids, size analysis, Screening, Storage, Conveynance, Size reduction, Classifer, Centrifuges, Cyclones. Filtration, Mixing and agitation.

ii) Chemical Technology and Process Calculations: Gas calculations Material balance and Energy balance – Steady and unsteady state, Humidity and Saturation, Combustion, Thermo chemistry, Role of Chemical Engineers in Process industry, cement, glass and ceramic industries, paper industry-Oil, Soap, Detergent industries, Petroleum refining and petrochemicals – Polymer industry, Fertilizers, Food industry and other important process industries.

Thermodynamics and Kinetics: Laws of thermodynamics, PVT behavior of fluids, Thermodynamic formulations, compression of fluids, Phase equilibria – Application of the correlation and prediction. Free energy change and reaction equilibria. Refrigeration – Principles, performance. Reaction rate – Laws, theories, analysis. Design of reactors, Factors affecting design, Thermal reactors and rates of heat exchanges. Non-ideal reactors, Hetrogenous reactors and solid catalysts, Gas-solid catalytic reactors, Gas-solid non – catalytic reactors, Gas-Liquid reactors.

Heat and Mass Transfer: Modes of Heat transfer. Heat conduction – steady and unsteady state, Natural and forced convection, Heat transfer to fluids with phase change, heat transfer coefficients, evaporation, heat exchangers-design and construction. Diffusion, Mass transfer coefficients, humidification, drying, absorption, distillation, extraction, leaching, crystallization, adsorption and ion exchange, analogies.

Process Control and Computer Applications in Chemical Engineering: Open loop systems, closed loop systems, Frequency response, advanced control systems, instrumentation. Application of spread sheet packages in Chemical engineering, Process flow sheeting, Development of software for design of equipments. Dynamic programming in Chemical engineering.

Organic and Surface Chemistry: Carbohydrates, Oils, Fats and Waxes, Heterocyclic compounds, proteins, dyes and dyeing, Pharmaceutical chemistry. Adsorption – types, adsorption of gases over solids, isotherms, applications, ion exchange, adsorption chromatography, Catalysis – types, Equations.

Electro, Polymer and Corrosion Chemistry: Factos influencing Corrosion, types of corrosion, corrosion control. Laws of migration of ions, conductometric titrations, advantages, galvanic cells, reversible and irreversible cells, Standard electrodes, electrode potentials, electrochemical series, Nernst equation. Polymeric materials, Teflon, Polymide, Nylon66, Kevlar, Polysters, Polythylene teryphthalate, poly butylenes tetra phthalate, polycarbonates bakelite, reinforcement, composites. Introduction to spectroscopic analysis, Molecular spectroscopy, IR, NMR, Mass Spectrometry.

Environmental Pollution and Control: Various methods of reduction of pollution, types of pollution, Air Pollution – sources and effects – control techniques, Water pollution – sources and effects – control techniques, Soil pollution – sources and effects – control techniques and Solid waste disposal.

Bioprocess Engineering: Analysis of STR, Analysis of other configurations, Bioreactor scale-up, Modeling and simulation of Bioprocesses, Bioreactor considerations in Enzyme systems.

Cell and Molecular Biology: Cells, Cell lines, Cell culture, Cell Organelles and its functions,

types of Cell divisions, cell cycle and its regulations mechanism. Transport Mechanism (passive, Active, ATPase pumps and Na+ / K+ pumps), Receptors, Signal Transduction, Models of Signal Amplification Secondary Messengers, Structure of Nucleic Acids, Replication, Transcription, Translation and DNA repair mechanism in Prokaryotes and Eukaryotes. Promoters, Enchancers and Transcription factors. Genetic Codes and Lac & trp operons.

Biochemistry and Microbiology: Structure, function and metabolism of Carbohydrates, lipids Nucleic Acids and proteins. Enzymes and its mechanism. Electron Transport Chain system, High energy compound and reducing equivalents. History of Microbiology, Classification of Microorganism, Structural organization and multiplication of Microorganism. Physical and Chemical control of Microorganisms, Primary and Secondary metabolites and their applications.

Genetic Engineering: Genes, control of gene expression, Restriction enzymes, Vectors, (prokaryotic and Eukaryotic) construction of cDNA and genomic Library. Screening of DNA libraries, PCR, RACE PCR, RAPD, RFLP, AFLP, Site directed mutagenesis, Methods of Nucleic acid sequencing. Cloning vectors in plants, Transgenic and Knockout animals.

Immunology: Immune system, Immunity, Lymphold organs, antigens, adjutants, types of immune response. Activation and different ion of T-cells and B-Cell responses. Immunity to viruses, Bacteria fungi and parasites, cytokines, complements, immunosuppression, allergy and hypersensitivity. Vaccines, Transplantation, Tumor Immunology, Autoimmunity and Autoimmune disorders.

Bioinformatics: Search engines and algorithms, dataa management, data echnology, biological databases and their uses. Pair wise sequence alignment (local and global), multiple sequence alignment, dot matrix, dynamic programming and Bayesian methods, BLAST, FASTA, machine learning and Hidden Markov models. Phylogenetic tree analysis. Bimolecular and cellular computing, microarray analysis and system Biology.

White wares, ceramic processing and fine ceramics: Quarrying of ceramic materials, size reduction, mechanical separation, mixing and conveying, powder characterization, Classification of whiteware products, heavy clayware, tests and quality control.

Glass, Cement, Refractory and Ceramic coatings: Formation and Structure of glass, preparation of glass batch, glass melting process, Special glasses, annealing, different types of refractories, different types of cement, concrete, properties of cement and concrete.

9. TEXTILE TECHNOLOGY

i) Fibre Science and Technology: Cotton varieties and their properties: silk – pre and post cocoon operations: varieties of silk and their properties: varieties of wool and their properties: properties of other natural fibres.

Production and properties of viscose rayon and other regenerated fibres.

Requirements of fibre forming polymers: structureal principles of polymeric fibres: fluid flow during spinning: technology of melt, wet, dry, dry jet wet, liquid crystal and gel spinning of polymeric fibres.

Production, properties and applications of PET polyster, nylon 6, nylon 66, polyacrylonitrile and polypropylene.

Spin finishes: drawing: heat setting: crimping and texturisation: tow to top converters and tow to staple converters.

Structural investigation of fibres: study of moisture absorption, tensile behaviour, torsional rigidity and flexural rigidity, and optical, frictional, electrical and thermal properties of fibres.

Yarn Engineering: Yarn numbering systems-direct, indirect and conversions.

Description and working of short staple spinning machinery – blow-room machinery, card, comber preparatory machines, comber, draw-frame, speed-frame, ring-frame, calculation of process parameters and process efficiencles: production calculations.

Methods of mixing and blending: two-folding of yarns: two for one twist principle: man-made fibre processing.

Principle and details of yarn formation in condensed yarn spinning, rotor spinning, friction spinning, air-jet spinning and other new spinning systems: structure of yarns produced from different spinning systems.

Control of waste, productivity and quality.

Fabric Engineering: Fundamental concepts in winding, modern automatic winders: yarn clearing: winding synthetic and blended yarns and sewing threads: weft winding: Creels used in warping machines: beam and sectional warping machines: Sizing materials and recipes: size preparation and application: control systems used in sizing machine: sizeing flament yarns: combined dyeing and sizing: energy conservation in sizing: process control in weaving preparation: preparation of warp beam for weaving.

Chemical Processing: Chemical structure and chemical properties of natural and man-made fibres: singeing: dresizing: scouring: bio preparatory operations: Mercerization: bleaching: heat setting: processing machines.

Adsorption isotherms: dye – fibre interaction: properties and application of direct, azoic, vat, sulphur, reactive, acid mordant, metal-complex, disperse and basic dyes: dyeing of blends: garment dyeing: assessment of colour fastness.

Fundamentals of colour measurement: whiteness and yellowness indices: colour matching; spectrophotometers.

Methods and styles of printing: printing machines: printing paste: printing with direct, reactive, acid and disperse dyes and pigments.

Calendering: crease proofing: anti-shrinking: softening: felting and non-felting of wool: bio-polishing: assessment of finishes: assessment of eco-friendliness of textiles; finishing of knits: garment washing.

Quality Evaluation: Textile quality parameters: online and off line testing methods.

Measurement of length and length uniformity, fineness, strength, maturity, trash content, moisture content of bires using conventional and modern testing methods: advanced fibre information systems, high volume testing: measurement of lap, sliver and roving irregularity.

Assessment of count, twist, hairiness, strength and extension, evenness, imperfection, friction, crimp rigidity, work of rupture, fatigue, abrasion resistance of yarn: classification of yarn faults.

Determination of fabric construction parameters: assessment of tensile, bursting and tear strengths, low-stress mechanical properties, permeability, insulation properties, durability, comfort and handle properties of fabrics: grading of fabrics based on defects.

Sampling: statistical significance tests: control charts.

10. LEATHER TECHNOLOGY

i) Pre Tanning Operations: Hides & Skins – Histological characteristics structure of hides & skins defects – curing & Preservation methods – Animal by products – soaking, unhairing, liming, deliming, bating, pickling, depickling and degreasing – Their objectives & principles involved. Biochemistry of collagen and other substances – chemicals & auxiliaries used in pre-tanning operations-General pretanning processes for manufacture of different types of heavy and light leathers-Process control in pretanning-ecofriendly pretanning operations-Physical and chemical testing – standards and quality control measures in pretanning. By products of animal and tannery operations.

ii) Tanning Operations: Tanning materials – Vegetable, mineral and organic – their classification chemistry & Technology of tanning materials & methods – characterization manufacture & analysis of various tanning materials. Theory & mechanism of vegetable, chrome, aluminium, Zirconium, Iron, Titarium, Aldehyde, Oil and other organic tanning. Various unit operations involved in tanning processes their objectives & principles – cleaner processing options – Analysis & characterization of various types of leathers – Physical and chemical testing – Standards and quality control measures in tanning operations.

Post Tanning and Finishing Operations: Retanning, dyeing – fatliquoring and finishing operations – Their objectives & principles – chemicals used for the above unit operations – Syntans, fatliquors, dyes, dye-auxiliaries, pigments, acrylic and protein binders, wax emulsion, fillers, topcoats, NC, CAB lacquers and lacquer emulsions, feel modifiers, their nature & properties in finishing – machinery &methods for post tanning and finishing operations – upgradation methods – chemical and physical properties required for various finished leathers –physical & chemical testing of finished leathers – Tannery Effluent treatment – Effluent treatment plant – Liquid and solid waste management.

Leathers & Leather Products: Various types of leathers – upper, sole, garment, leather goods, sports & specially leathers – their characteristics, leather supplement and synthetics – Design & manufacture of footwear, leather goods & garments. Leather Economics and Industrial Management – Project feasibility reports – organization & management of leather sector – marketing & export of leather & products – Machines for leather products manufacture – mechanics & operation – IT applications for leather & product design. Professional Ethics and human values.

11. ARCHITECTURE

Building Materials, Construction and Technology: Lime, Brick, Stone, Clay products, Timber, Industrial Timber: Paints and varnishes, Concrete, Special Concrete and light weight concrete: Ferrous metals: non ferrous metals: Glass: Plastics: Eco friendly materials: Thermal Insulation materials and acoustic materials. Construction techniques and practices using the above listed materials: damp and water proofing: Pest control: Construction systems and equipment: Pre – stressed concrete and Tensile Structures: Grids domes: folded plates: Flat Slabs. Low cost construction & appropriate technologies.

History of Architecture: Indian architecture – Hindu and Islamic: Indo Saracenic: Secular architecture of the princely states: Colonial and Post Independence Architecture: Works of masters such as Charles Correa: B V Doshi: Ananth Raje: Raj Rewal: Laurie Baker: Nari Gandhi: Kanvinde.

Western architecture – Ancient Greek and Rome: Early Christian: Gothic and Renaissance: Baroque: Neo Classicism: Chicago School and development of skyscraper" **Modern architecture:** Art and Crafts: Art Noveau: Expressionism and Cubism: Bauhaus: International style: Post Modernism and Constructivism: Critical Regionalism: Theories and Projects of F L Wright: Le Corbusier: Gaudi, Group Aalto: Mies: Eisenmann: Zaha Hadid: Soleri: Hasan Fathy: Ando: Bawa: Gehry, Libeskind: Toyo Ito Lou Khan: Tschumi: Greg Lynn: Assymptote.

Theory and Principles of Architecture: Elements of ordering principles: Organization of for and space: Design methodology and Creative thinking: Pattern Language: Contemporary Process Diagrams, Shape grammar, fractals, Digital hybrid, Liquid architecture.

Building Services: Water supply and distribution systems: water and waste management Sewerage system: Electrical systems: Illumination and lighting: Air conditioning: Fire Safety: Building automation and IBMS.

Building Science: Climate responsive architecture: design of solar shading devices: acoustics & building design: Architecture & Energy – Active & passive solar architecture, Day lighting & natural ventilation, Landscape designs: Landscape & environment control.

Housing: Urban Design and Town Planning: National Housing Policy: Indra Awas Yogana Housing standards: housing projects in India: Urban morphology of early and contemporary cities: Case Studies on urban revitalization from developed and developed economies: Planning concepts – Patrick Geddes, Ebeneezer Howard, Le Corbusier, C A Perry: Urban planning, regional planning and Urban renewal in the Indian context.

12. PHYSICS AND MATERIAL SCIENCE

Mechanics, Heat and Sound: Vectors – equilibrium – moment of a force – Newton's laws of motion – gravitation – work – energy – power – Impulse and momentum – collitions – recoil. Thermometry of thermal expansion – calorimetry and specific heats – transfer for heat – thermal process of matter – Law and processes of thermodynamics – Applications. Travelling waves – oscillations – spring – simple pendulum – forced oscillations – resonance – sound waves – Acoustic Phenomena and its applications – Doppler effect.

Light and Properties of matter: The nature and propagation of light – reflection of refraction at plane surfaces – interference – diffraction – polarization. Elasticity – Stress-strain diagram – hydrostatics – Pressure in a fluid – Pumps – Archimede's principle – Surface tension – Contact angle – Capillarity – hydrodynamics – Bernoulli's equation – Applications and viscosity – Poiseuille's law – Stokes law – Reynolds number.

Electricity and Magnetism: Coloumb's law – Gauss's law – Applications – electrostatic potential – capacitors – dielectrics – currnt – resistance – emf – Kirchoff's law – thermo electric effect – applications. Magnetism – Magnetic effects of current – motion of charge particles in magnetic field – cyclotron – magnetic forces on current carrying conductor – Hall effect – electromagnetic induction – Faraday's law – Lenz's law – eddy current - Inductance – mutual and elf inductance – magnetic properties of matters – diamagnetism – paramagnetism –

ferromagnetism – domains – Hysteresis – alternating current – circuits containing resistance, inductance or capacitance – transformer.

Modern Physics: Emission and absorption of light – thermionic emission – photoelectric effect – atomic spectra – atom models – molecular spectra – dual nature of matter and radiation – nuclear structure – properties – natural radioactivity – nuclear stability – nuclear reactions – fission – fusion – fundamentals particles – high energy physics. Solid State Electronics: Structure and bonding in solids – properties of solids – semiconductors – intrinsic – extrinsic – PN junction – diode characteristics – Zenar diode – LED, laser diode – Photodiode – Transistor – action and characteristics – amplifier – oscillator – basic logic gates.

Electron Theory of solids: Classical free electron theory – density of states – electron in a periodic potential – origin of energy band gap – electrical conductivity – thermal conductivity – Widemann – Franz law.

Dielectric and Magnetic Materials: Different types of polarization – Internal field – Clausius – Mosotti equation – dielectric breakdown – applications of dielectric materials – different types of magnetic mterials – domain theory of ferromagnetism – hysteresis – hard and soft magnetic materials – applications of magnetic materials.

Superconducting materials: General properties of superconducting materials – Meissner effecttypes of superconductors – Hi Tc superconductors – applications.

Nanomaterials : Preparation – properties – applications – Carbon nanotubes.

13. MATHEMATICS

Algebra

Algebra: Group, subgroups, Normal subgroups, Quotient Groups, Homomorphisms, Cyclic Groups, permutation Groups, Cayley's Theorem, Rings, Ideals, Integral Domains, Fields, Polynomial Rings.

Linear Algebra: Finite dimensional vector spaces, Linear transformations – Finite dimensional inner product spaces, self-adjoint and Normal linear operations, spectral theorem, Quadratic forms.

Analysis

Real Analysis: Sequences and series of functions, uniform convergence, power series, Fourier series, functions of several variables, maxima, minima, multiple integrals, line, surface and volume integrals, theorems of Green, Strokes and Gauss: metric spaces, completeness, Weierstrass approximation theorem, compactness.

Complex Analysis: Analytic functions, conformal mappings, bilinear transformations, complex integration: Cauchy's integral theorem and formula, Taylor and Laurent's series, residue theorem and applications for evaluating real integrals.

iii) Topology and Functional Analysis

Topology: Basic concepts of topology, product topology, connectedness, compactness, countability and separation axioms, Urysohn's Lemma, Tietze extension theorem, metrization theorems, Tychonoff theorem on compactness of product spaces.

Functional Analysis: Branch spaces, Hahn-Banach theorems, open mapping and closed graph theorems, principle of uniform boundedness: Hilbert spaces, orthonormal sets, Riesz representation theorem, self-adjoint, unitary and normal linear operators on Hilbert Spaces.

iv) Differential and Integral Equations

Ordinary Differential Equations: First order ordinary differential equations, existence and uniqueness theorems, systems of linear first order ordinary differential equations, linear ordinary differential equations of higher order with constant coefficients: linear second order ordinary differential equations with variable coefficients, method of Laplace transforms for solving ordinary differential equations.

Partial Differential Equations: Linear and quasilinear first order partial differential equations, method of characteristics: second order linear equations in two variables and their classification: Cauchy, Dirichlet and Neumann problems, Green's functions: solutions of Laplace, wave and diffusion equations using Fourier series and transform methods.

Calculus of Variations and Integral Equations: Variational problems with fiexd boundaries: sufficient conditions for extremum, Linear integral equations of Fredholm and Volterra type, their iterative solutions, Fredholm alternative.

v) Statistics & Linear Programming

Statistics: Testing of hypotheses: standard parametric tests based on normal, chisquare, t and f distributions.

Linear Programming: Linear programming problem and its formulation, graphical method, basic feasible solution, simplex method, big-M and two phase methods. Dual problem and duality theorems, dual simplex method. Balanced and unbalanced transportation problems, unimodular property and u-v method for solving transportation problems. Hungarian method for solving assignment problems.

14. SOCIAL SCIENCES

Geography: Settlement georgraphy-rank-size relationship, urban environment – physical and social, regional delimitation, central place theory, urbanization in India and Tamilnadu, relationship, concept and types of region, regional development planning in India, globalization and economics reforms and competitivenss.

Sociology: Social institution, society, community, social roles, norms, status, values, social structure in India, social change and its relevance to economic development, urbanization as a way of life, social problems of developed and developing countries, impact of urbanization of society and rural development, impact of IT industry on society and development.

Economics: Agglomeration economics – internal, external and urbanization economics, economic base of cities – meaning, types of economic base and methods of identifying economic base, multiplier concept, and approaches of development, Indian national economy – five year plans, environmental economics, economic geography of India. Land economics and industrialization policy, SEZs, IT, ITES industries.

Social Work: Role of social worker and NGO's in development – community, rural, social and national level: public participation in developmental framework – city, regional, and national level, awareness programme on policies, counseling – rational emotive therapy, behavior modification therapy, family counseling, group work – treatment group, task group, community work – rural and urban community developments/micro credit/micro finance/SHGs.