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NOTE: Syllabus of Entrance Test SET-IV and SET-V for admission to Diploma Programme-2009 (vertical entry) and Degree Programme-2009 (vertical entry) will be available separately in SET Office, SLIET, Longowal and on the Institute website www.sliet.ac.in

Price of Information Brochure : (i) Rs 325/- at counter in SLIET (Rs. 350/- by Regd. Post)
(ii) Rs. 340/- at counters other than SLIET

Fee for SLIET Entrance Test: Rs.500/- (Rs.250/- for SC/ST Candidates) as Cash or DD in favour of DIRECTOR, SLIET (DD should be preferably of Oriental Bank of Commerce or Central Bank of India or Punjab National Bank or State Bank of India and payable at Longowal/Sangrur)

IMPORTANT INFORMATION FOR SET-2009

IMPORTANT INSTRUCTIONS

1. Do not attach any Certificate/Marksheet with OMR Application Form
2. In case of non-receipt of admit card report at the examination centre with two recent attested photographs. (Confirm your centre from the Chairman, SET-2009)
3. Enclose the bank draft in the envelope for OMR Application Form without Stitching/Stapling.

Important Date:

Last date for receipt of complete Application Form Thursday, May 7, 2009

Date of Examination

- Certificate Programme (SET-I) **Saturday June 6, 2009**
- Diploma Programme (SET-II) **Saturday June 6, 2009**
- Degree Programme (SET-III) **Saturday June 6, 2009**
- M.Tech./P.G. Programme (SET-VI) **Saturday June 6, 2009**
- Vertical Entry (Diploma & Degree)^{SET-IV and SET-V} **Saturday June 20, 2009**

Declaration of Result Wednesday July 1, 2009

*Counselling for Admission:

- | | |
|---|------------------------------------|
| 1. Certificate Programme | Thursday -Friday, July 23-24, 2009 |
| 2. Diploma Programme | Saturday, July 25, 2009 |
| 3. Degree Programme | Monday-Tuesday, July 27-28, 2009 |
| 4. P.G./M.Tech. Programme
and PWD admissions | Wednesday, July 29, 2009 |

**Dates for Counselling are tentative/provisional*

Commencement of Classes

Monday August 3, 2009

CHECK LIST

Following must be checked while sending the Application Form:

- | | |
|--------------------------------------|--------|
| 1. OMR Application Form | Yes/No |
| 2. Bank Draft/Cash Receipt | Yes/No |
| 3. Photograph pasted at proper place | Yes/No |
| 4. Declaration signed | Yes/No |

Note: No Certificate/mark sheets etc. be attached with the OMR Application Form.

The Certificate/mark sheets will be verified at the time of counselling for Admission

For any Information Contact:

Dr. S.S. Dhaliwal
Chairman, SET-2009
Tel. No.01672-280072, 305135, 305136
Fax No.01672-280072 , 280057,280059
Email: chairmanset2009@gmail.com

CHAPTER-I

THE INSTITUTE

1.1 INTRODUCTION

Sant Longowal Institute of Engineering & Technology (SLIET) has been established by the Government of India to provide technical education in emerging areas of Engineering & Technology. It caters to the technical manpower requirements at various levels by adopting a concept of modular system in imparting technical education with emphasis on practical training in industry. This institute was set up in 1991 in the memory of late Sant Harchand Singh Longowal and is fully funded by Ministry of Human Resources & Development, Government of India. The educational programmes of this institute are non-conventional, innovative, practical oriented and contain all aspects of new education policy (1986) of Govt. of India. The Institute offers programmes at Certificate, Diploma, Degree and Post-graduate (M.Tech.) levels in various branches of Engineering & Technology. The Ph.D. programmes in Science & Engineering have also been introduced. The programmes in the Institute provide both lateral entry and vertical mobility at Certificate, Diploma & Degree levels of education, besides non-formal education & entrepreneurship development programmes. The Institute has acquired the status of a Deemed-to-be-University in the year 2007 (Notification No.F.9-42/2001-U.3).

1.2 OBJECTIVES

The objectives of the Institute are:

(a) Education and Training:

- (i) To offer flexible, modular, layered, multipoint entry/exit programmes in Engineering & Technology,
- (ii) To promote "Self-employment" in all programmes by introducing a component of entrepreneurship & providing guidance and counseling services to help students to take-up self employment ventures,
- (iii) To offer non-formal programmes in different areas of Technology to strengthen the scope of Institutional programmes,
- (iv) To provide Technical Education facilities for women, through specially designed courses,
- (v) To offer continuing education programmes for working personnel from industries at different levels,
- (vi) To offer bridge courses for lateral entry in all programmes and for moving from one level of course to another level,
- (vii) To meet the requirements of small, medium and large scale industries
- (viii) To offer higher level programmes in the Institute after acquiring necessary competence at lower level programmes of the Institute
- (ix) To provide non-formal education and training to persons from unorganized sectors and school drops-out through its extension services, to enable them, to acquire basic technical skills, so that they are successfully employed.

(b) Extension Services:

To offer services to:

- | | |
|---|--------------------------------|
| (i) Industries in the neighbourhood and in the region | (ii) Working personnel |
| (iii) Passed out students | (iv) I.T.I.'s and Polytechnics |
| (v) Research and other institutes of higher learning | |

(c) Research & Development:

- (i) To conduct exploratory research to assess manpower requirement leading to integrated educational planning, curriculum development & instructional material development in the identified areas of Science & Technology,
- (ii) To conduct research in the inter-disciplinary areas aimed at solving the problems of industry and community. The concept of practice school introduced in the Institute, will enable the students to attain the knowledge of modern technology practices in the Industries within reasonable time frame.

(d) Collaporations

Number of M.O.U.'s with reputed industries and institutes of higher learning have been signed and some more are in pipe-line, for the purpose of drawing the expertise available with them, for the overall development of the Institute.

1.3 STATUS

The Institute is an autonomous body having the status of a Deemed-to-be-University and fully funded by the Government of India. It is controlled by SLIET Society, registered under Societies Registration Act, 1860. The Institute awards its own Certificates, Diplomas and Degrees including M. Tech. and Ph.D. Further, it is clarified that:

- (a) Certificate, Diplomas and Degrees awarded by SLIET are duly recognized by All India Council for Technical Education (A.I.C.T.E.), New Delhi (Letter No.F,765-65-031(E)/ET/97 dated July 4, 1997 and Letter No.F-765-65/ET/97 dated April 15, 1997). Certificate courses of SLIET are equivalent to 10+2 qualification and Diploma Courses of SLIET are equivalent to the Diplomas awarded by the various State Boards of Technical Education in the appropriate fields for the purpose of recruitment to the posts and services under Central Government (Notification 42 No.F 18-8/93 T.D.V./T.S. IV dated March 8, 1995).
- (b) Diplomas awarded by SLIET are exempted from Section-A of AMIE by The Institution of Engineers (India) vide letters No.EEA/AKG/R-22A dated Feb 20, 1995; EEA/AD/R-22A dated July 23, 1996 and EEA/AKG/R-22A dated November 1, 1999.
- (c) Punjab University, Chandigarh vide its letter No.ST/8374 dated 21.9.1999 has recognized the Certificate courses of SLIET for the purpose of admission to B.A./B.Sc./B.C.A. 1st year courses.
- (d) Department of Technical Education & Industrial Training, Govt. of Punjab, Chandigarh vide its Memo No.13/23/05-1 T.S.2/32 dated 4.1.2006 has recognized Certificate Course of SLIET equivalent to 10+2. According to the notification, SLIET students are eligible for the admission to B.E./B.Tech. Programmes of Punjab Technical University, Jalandhar (state-wide).
- (e) PG/M.Tech. Programmes of the Institute are approved by All India Council for Technical Education (A.I.C.T.E.), New Delhi.

1.4 LOCATION

The Institute is situated at Longowal (around 8 Km. from Chandigarh-Bathinda Highway) in the District of Sangrur, Punjab. It is connected by road with Sangrur (18 Km.), Ludhiana (120 Km.), Chandigarh (150 Km.) and Delhi (360 Km.). The nearest railway stations are Sangrur (18 Km.), Dhuri (30 Km.) & Sunam (16 Km.) on the Northern Railway. The nearest airports are at Chandigarh and Bathinda.

1.5 FACILITIES

The Institute has come up beautifully in a sprawling area of 451 acres with all modern facilities to the residents in the campus such as;

(a) Hostels:

SLIET is a residential campus with eight hostels for boys, two for girls and one for PG students accommodating about 2500 which includes about 400 girl students. The hostels have been provided with modern kitchens, comfortable dining halls and indoor games facilities. Internet connectivity, Newspapers, Magazines and Cable T.V. facilities are also available in all the hostels. **Hostel facility shall be provided only, if available.**

(b) Teaching Departments & Workshop:

The Institute has well-established departments of

- (i) Computer Science & Engineering,
- (ii) Electronics & Communication Engineering,
- (iii) Electrical & Instrumentation Engineering,
- (iv) Mechanical Engineering,
- (v) Chemical Technology,
- (vi) Food Engineering & Technology,
- (vii) Physics,
- (viii) Chemistry,
- (ix) Mathematics,
- (x) EDP and Humanities.

All the departments have well qualified faculty and supporting staff with laboratories equipped with the modern equipments. A modern workshop has been set up. The equipments in the workshop have been installed according to the training Programmes. An exhaustive practical training is imparted to the students to develop their working skills.

(c) Central Library:

The Library is housed in a modern building having all kinds of facilities for its best utilization by the faculty, staff and students. It has large number of volumes of technical books along with a good collection of books on literature, general

awareness, management, social sciences and humanities. The central library is subscribing numerous National/International periodicals and magazines for the benefit of its users. Besides these journals, the central library is a member of INDEST Consortium. Through INDEST, the faculty, staff and students of the institute have access to full text journals from IEEE, Springer, Science Direct, ASME, ASCE, ACM, NATURE etc. The library users also have access to DELNET database and JCCC.

(d) Computing Facilities:

The Institute is equipped with latest and powerful hardware and software systems. The computer laboratories provide opportunity to students and faculty to work on LINUX and Windows platforms. The institute provides exposure to high-end database packages such as Oracle, Sybase, DB2 and front end tool such as Power Builder & Developer 2000, Visual J++, Visual Basic etc. The Project Lab and Internet Lab are opened for 24 hours to the students. More than 500 nodes spreading over different academic blocks, hostels and other buildings are interconnected through campus wide network. The complete information about the Institute is available on its website www.sliet.ac.in.

(e) Central Instrumentation Centre:

The Institute has set-up a Central Instrumentation Centre for servicing & maintenance of various equipments.

(f) Health Centre:

The Institute has its own Health Centre to provide necessary medical aid to the students and staff in the campus. The Medical Officers along with other infrastructure are available in the campus. Specialists are also invited to the health centre for providing consultation to the residents. Ambulance is also available to shift the serious patients to the nearby hospitals.

(g) Bank, Post Office, Telephone Exchange and Shopping Centre:

A branch of Central Bank of India and a post office are functioning in the campus to cater the needs of the faculty, staff and the students. STD payphone and cyber café facilities are available in the campus. A 450 line EPABX internal telephone facility is available in the institute which is being upgraded further. Each hostel has been provided with a telephone facility. A moderate shopping centre has been set-up to cater to the needs of the residents. All major players of mobile companies have established their network around the campus.

(h) Sports:

Adequate provisions for extra-curricular activities are made in the institute. At present, facilities are available for Table Tennis, Badminton, Swimming, Volley-Ball, Football, Hockey, Cricket, Basketball, Lawn Tennis and other indoor games.

(i) Students Activity Centre:

A modern Students Activity Centre (SAC) which has badminton hall, Squash court, well equipped Gymnasium, other indoor games facilities, Cafeteria etc., is fully functional.

(j) Extra Curricular Activities:

Students are encouraged to participate in extra curricular activities. Music and Hobbies clubs are functioning very effectively. Literary society is organizing various literary activities from time to time. Almost all the departments have their own technical societies which organize technical seminars, quizzes and other competitions in the departments to give a thrust to the development of academic potential of the students. N.S.S. unit is very active at the campus in organizing Blood Donation Camps, Tree Plantation and other social works.

(k) Curriculum Development Cell:

The Institute has its own Curriculum Development Cell and Resource Centre for production of teaching aids and systemic development of curriculum to suit the requirements of industry.

(l) Internet:

The institute has dedicated 4 MBPS lease line internet connectivity for the benefit of the students and faculty. Internet facility has been extended to various academic blocks, hostels and other buildings through campus wide networking.

THE FACULTY AND ADMINISTRATION

DIRECTOR

Varinder Sahni, Ph.D.

DEANS

A.S. Dhaliwal, Ph.D., Dean (PG Programmes)
B.K. Kanungo, Ph.D., Dean (R&D)
J.S. Dhillon, Ph.D., Dean (Administration)
M.B. Bera, Ph.D., Dean (Academics)
Sanjay Marwaha, Ph.D., Dean (SW)
V.K. Jain, Ph.D., Dean (P&D)

DEPARTMENT OF CHEMICAL TECHNOLOGY

Professor:

Manohar Singh Saini, Ph.D. (On Lien)

Assistant Professors:

Avinash Thakur, M.E.
H. R. Ghatak, M.E.
Kamlesh Kumari, Ph.D. (H.O.D.)
Pushpa Jha, Ph.D.
P.P. Kundu, Ph.D. (On Lien)
Sandeep Mohan Ahuja, Ph.D.

Lecturers:

A.S.K. Sinha, M.Tech.
Dharm Pal, M.Tech.
Gulshan Kumar Jawa, M.E.
Naveen Kumar Kaushley, B.E.
Subita Bhagat, M.Tech.
Vinay Kumar, M.Tech.
Vinod Kumar Meena, B.E.

DEPARTMENT OF CHEMISTRY

Professor:

B.K. Kanungo, Ph.D. (H.O.D.)

Assistant Professors:

Damanjeet Singh, Ph.D.
Dhiraj Sud, Ph.D.
Harish Kumar, Ph.D.
Minati Baral, Ph.D. (On Lien)
Ram Pal, Ph.D.

Lecturer:

Hemant Kumar, Ph.D.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Assistant Professors:

Abanish K. Singh, M.E. (On Study Leave)
Birmohan Singh, M.E. (H.O.D.)
Damanpreet Singh, M.S.
Gurjinder Kaur, M.S.
Manoj Kumar Sachan, M.E.
Major Singh, M.E.
Pardeep Singh, M.S.
Savita Kansal, M.E. (On Lien)
Sukhwinder Singh, Ph.D.

Lecturers :

Jaspal Singh, M.E.
Manminder Singh, M.Tech.
Vinod Kumar Verma, M.S

DEPARTMENT OF ELECTRICAL & INSTRUMENTATION ENGINEERING

Professors :

Ajat Shatru Arora, Ph.D.
J.S.Dhillon , Ph.D
Sanjay Marwaha, Ph.D
V.K. Jain, Ph.D. (H.O.D.)

Assistant Professors :

Anshuka Bansal, M.Tech.(On Deputation)
Ashwani Kumar, M.Tech.
Diljinder Singh, M.E. (On Lien)
Manpreet Kaur, M.Tech.
Manpreet Singh Manna, M.E.
Pratibha Tyagi, M.Tech.
Rajinder Kaur, M.Tech.
Surita Maini, M.E.

Lecturers :

Amanpreet Singh, M.Tech. (with PTU)
Asim Ali Khan, M.Tech.
Charanjiv Gupta, B.E.
Gurmeet Singh, B.E.
Jaspal Singh Aujla, M.B.A., M.Tech.
Manmohan Singh, M.E.
Raj Kumar Garg, M.E.
Sanjeev Singh, M.Tech. (Study Leave)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Professor:

Amar Partap Singh, Ph.D. (H.O.D.)

Assistant Professors :

Anupma Marwaha, Ph.D.
Harish Kumar Singla, Ph.D.
Jagpal Singh Ubhi, M.E.
Lakhvinder Singh, M.Tech.
P.C. Upadhyay, Ph.D.
Surinder Singh, Ph.D.

Lecturers :

Ajay Pal Singh, M.E.
Jatinder Singh, B.E.
Pankaj Kumar Das, B.E.
Rajeev Kumar Ranjan, M.Tech.

DEPARTMENT OF E. D.P. & HUMANITIES

Assistant Professors :

Jap Preet Kaur Bhangu, Ph.D
Mahesh Kumar, Ph.D. (H.O.D.)
Pardeep Kumar Jain, Ph.D.
Parveen Kaur Khanna, Ph.D
Pawan Kumar Dhiman, Ph.D

Lecturers :

Mandeep Ghai, M.B.A.
Sanjeev Bansal, M.B.A., Ph.D.
Sanjeev Kumar Garg, M.B.A.

DEPARTMENT OF FOOD ENGINEERING & TECHNOLOGY

Professors :

B.C. Sarkar, Ph.D.
D.C. Saxena, Ph.D.
H.K. Sharma, Ph.D.
M.B. Bera, Ph. D. (H.O.D.)

Assistant Professors :

Bahadur Singh, Ph.D.
Kamlesh Prasad, Ph.D.
P.S. Panesar, Ph.D.
Vikas Nanda, Ph.D.

Lecturers:

Charanjit Singh Riar, Ph.D.
Charanjeev Singh, M.Sc.
Iqbal Singh, M.Sc.
Navdeep Jindal, M.Tech.
Pradyuman Kumar, Ph.D.
Sukhcharn Singh, Ph.D.

DEPARTMENT OF MATHEMATICS

Professor :

S.S. Dhaliwal, Ph.D. (H.O.D.)

Assistant Professors :

Janak Raj Sharma, Ph.D.
Mandeep Singh, Ph.D.
R.K. Guha, Ph.D.
Ravi Kant Mishra, Ph.D.
Sushma Gupta, Ph.D.
V.K. Kukreja, Ph.D.
Vinod Mishra, Ph.D.

Lecturers :

R.K. Goyal, M.Phil.

DEPARTMENT OF MECHANICAL ENGINEERING

Professors :

Anand Vaz, Ph.D. (On Lien)
Pradeep Kumar Singh, Ph.D.
Pardeep Gupta, Ph.D.
V. Sahni, Ph.D.

Assistant Professors :

Amrik Singh, M.E.
Amandeep Singh Shahi, Ph.D.
Anil Singla, M.E.
Arvind Jayant, M.Tech.
Harminder Singh Bains, M.E.
Harmesh Kumar Kansal, Ph.D.
Jagtar Singh, Ph.D.
Jaspal Singh Gill, M.Tech.
Jatinder Madan, Ph.D.
Kanwalpreet Singh, M.E.
Kulwant Singh, Ph.D.
M.A. Akhtar, M.Tech.
Manoj Kumar, M.E.
Rajesh Kumar, Ph.D.
Ravindra Kumar Saxena, M.Tech.
Shankar Singh, Ph.D.

Suresh Chander Verma, M.E.
Vikas Rastogi, Ph.D.

Lecturers :

Harish Kumar Arya, M.Tech.
Indraj Singh, M.Tech.
Manpreet Singh, B.Tech.
Mohd. Majid, M.Tech.
Raj Kumar Yadav, M.Tech.
Rakesh Kumar, M.Tech.
Surinder Kumar, B.Tech.
Sunil Kumar, M.Tech.
Sumit Kumar, B.Tech.
Vivek Kumar, B.Tech.

DEPARTMENT OF PHYSICS

Professors :

A.S. Dhaliwal, Ph.D.(H.O.D.)
N.P. Singh, Ph.D. (On Deputation)

Assistant Professors :

K.S. Mann, Ph.D.
Kiranjit Singh Kahlon, Ph.D.
M.M. Sinha, Ph.D.
S.S. Ghumman, Ph.D.
S.S. Verma, Ph.D.

TRAINING & PLACEMENT CELL

Head

Pardeep Gupta, Ph.D.

SCHEME FOR PERSONS WITH DISABILITY

Project Coordinator

Harish Kumar, Ph.D.

WORK SHOP

Head

Shankar Singh, Ph.D.

Astt. Workshop Superintendents

Harbhajan Singh, Diploma (Mech. Engg.)
Hamender Kumar Aggarwal, M.Tech.

CENTRAL LIBRARY

Librarians :

Prithvi Singh, M.Phil.(Lib. & Inf. Sci.)
Sanjay Gupta, M.Lib.

SPORTS DEPARTMENT

S. S. Punia, S.P.I., M.P.Ed., N.I.S.
Sukhwinder Kaur, P.I., B.A., B.P.Ed.

ADMINISTRATIVE & ACCOUNTS STAFF

Deputy Registrar (Administration)

D.C. Saxena, Ph.D.

Deputy Registrar (Accounts)

Rakesh Mishra, M.Com, LLB, DCA, PGDBA

Superintendent:

Harmesh Singh, M.A.

STORE PURCHASE OFFICE

Store Purchase Officer :

C.S. Matharoo, DME

HEALTH CENTRE

Medical Officer:

Suresh Goyal, M.B.B.S.

ESTATE OFFICE

Estate Officer :

Sudeep Singh, M.E.

CHAPTER-II

PROGRAMME STRUCTURE

The Institute offers modular pattern of education in emerging areas of Engineering and Technology. Following six types of Programmes are offered by the institute:

- (a) Certificate (b) Diploma (c) Degree (d) MBA (e) M.Tech (f) Ph.d

2.1 CERTIFICATE PROGRAMME

The objective of the Certificate programme is to produce technically skilled manpower in appropriate areas. The meritorious students who wish to study further may join the advance programmes of SLIET to acquire higher qualification.

- (a) **Entry Qualification** : The minimum qualification for admission to the Certificate programme is Matric pass (Pass in English, Mathematics and Science is compulsory) from a State Secondary Education Board/CBSE/ICSE/National Open School or equivalent.
- (b) **Duration** : The duration of the Certificate programme is 2 years.
- (c) **Disciplines** : Admission is available in the following Certificate disciplines:

INTAKE AND DISTRIBUTION OF SEATS FOR THE ACADEMIC SESSION 2009-2010

Disciplines	No. of students
Air Conditioning and Refrigeration (CAC)	41
Auto and Farm Machinery (CAF)	41
Computer Applications (CCA)	41
Foundry & Forging (CFF)	40
Food Technology (CFT)	41
Maintenance of Television (CTV)	41
Maintenance of Electrical Equipments(CMEE)	41
Paper and Printing Technology (CPPT)	40
Servicing and Maintenance of Electronics Instruments (CSME)	41
Servicing and Maintenance of Medical Instruments (CSMM)	41
Tool and Die Technology (CTD)	41
Welding Technology (CWG)	41
Total	490

- (d) **Admission Procedure** : Admission to all Certificate courses shall be made on the basis of a National Level Entrance Test (SET-I). General principles relating to reservation, quota for the students of Punjab state, Other states and U.T. are given in **Section 2.4**.

2.2 DIPLOMA PROGRAMME

The objective of the Diploma programme is to produce supervisory level technical manpower. More stress is given for practical oriented class work with an extensive training in Industry.

- (a) **Entry Qualification** : The minimum qualification for admission to the Diploma Programmes is 10+2 pass with Physics, Chemistry & Mathematics from a recognized board/university or a Certificate pass from SLIET in any trade. The candidates who have studied Biotechnology or Computer Science or Biology instead of Chemistry at 10+2 level are also eligible.
- (b) **Duration** : The duration of Diploma programme is 2 years.

(c) **Disciplines** : Available disciplines and information regarding distribution of seats in Diploma Programmes are given in **Table-I**.

(d) **Admission Procedure**: There are two categories of seats in this programme as per **Table-I**.

(i) Vertical Entry Seats (ii) Direct Entry Seats

The admission procedure for these two categories is as under:-

(i) **Vertical Entry Seats (Only for SLIET Students admitted in the year 2007)** : There will be vertical mobility of 50% of the students admitted (on the cut off date, i.e., 17.09.2007) in each Certificate Programme to Diploma programme. The linkage between Certificate and Diploma modules is illustrated in **Table-II**. For vertical promotion from Certificate course to Diploma course against these reserved seats, the Certificate course students shall appear in a special entrance test (SET-IV) designed for them in order to enter into the Diploma stream as per **Table-II**. The merit of such candidates shall be based on 60% weightage of their score in the Entrance test and 40% weightage of their score in the qualifying Certificate course provided that student had got admission in Certificate course in 2007-2008 and not earlier and had completed the course in the prescribed period of normal study i.e. two years and by availing only prescribed chances to clear a subject. Prescribed chances to clear a subject are one regular and two supplementary chances. However, a student having supplementary in 4th semester i.e. the last semester shall be given only one supplementary chance for the purpose of promotion to Diploma module.

Note: Their shall be vertical mobility of 50% of the sanctioned strength of the students in each Certificate programme to Diploma programme of SLIET for the students admitted / to be admitted in the Certificate Programme in the year 2008 and there after.

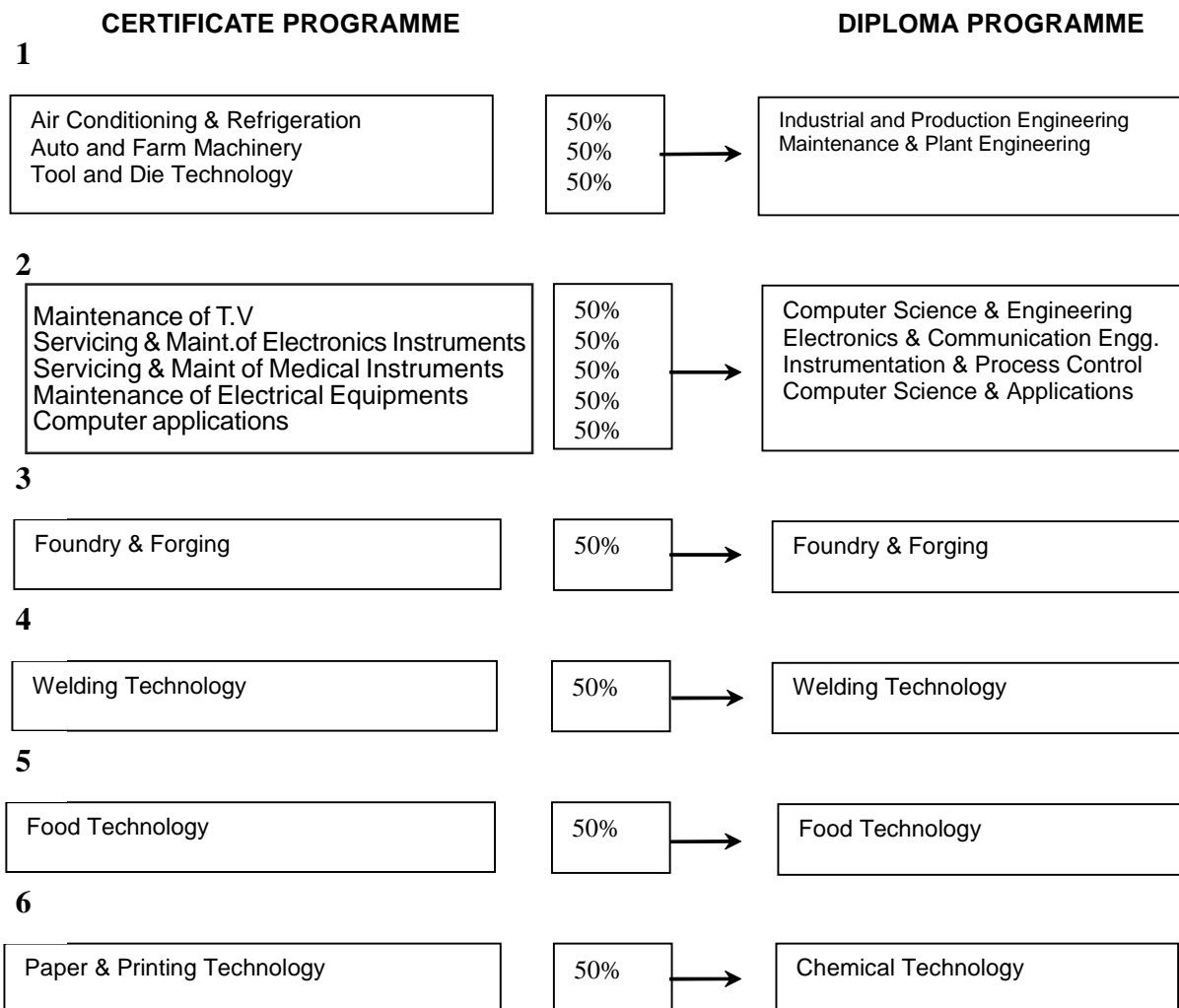
(ii) **Direct Entry Seats (For outside candidates and SLIET students)**: A national level SLIET Entrance Test (SET-II) shall be conducted by the institute for admission to these seats on the basis of merit. Non-SLIET candidates with qualification as per 2.2(a) and SLIET students admitted before 2007-2008 in Certificate course are eligible to get admission against these seats. Even a SLIET student admitted in Certificate Course in 2007-2008 is entitled to apply for admission under direct entry seat in any Diploma programme but he/she will be considered for direct entry seat in that Diploma programme which is not available to him/her by way of vertical promotion. The SLIET students competing for direct entry seats shall have to appear in SET-II examination and shall be treated completely at par with the outside (Non-SLIETian) candidate for admission to this category without any weightage to their score in the qualifying Certificate course.

TABLE-I : Distribution of Seats* for Diploma Programme for the Academic Session 2009-10

Sr. No.	Discipline	Sanctioned Seats	Seats for Vertical Entry	Seats for Direct Entry
1.	Chemical Technology (DCT)	41	17	24
2.	Food Technology (DFP)	40	17	23
3.	Computer Science & Applications (DCA)	41	18	23
4.	Computer Science & Engineering (DCE)	41	24	17
5.	Electronics & Communication Engineering (DEC)	41	24	17
6.	Instrumentation & Process Control (DIN)	41	23	18
7.	Industrial & Production Engineering (DIP)	41	27	14
8.	Maintenance & Plant Engineering (DMP)	41	26	15
9.	Welding Technology (DWT)	41	17	24
10.	Foundry Technology (DFT)	40	17	23
	Total	408	210	198

**10% seats over and above the sanctioned strength will be offered to NRI/NRI sponsored candidates (latest instructions of Govt. of India shall apply at the time of admission) and admission to this category will be on the basis of merit of SET-II. However, if the seats remain vacant then the candidates who did not appear in SET-II can also be considered and admission of such candidates against vacant seats shall be on the basis of the merit of qualifying examination. No vertical promotion system is available for the students admitted under 10% NRI/NRI sponsored category for promotion from Diploma to Degree programme*

TABLE-II : Linkage between various Certificate and Diploma Programme for the Academic Session 2009-2010



2.3 DEGREE PROGRAMME :

Degree programme is a continuation of technical expertise acquired in corresponding diploma Programmes and offers an opportunity to diploma holders to obtain Degree in Engineering.

(a) Entry Qualifications : All candidates who have passed Diploma course in any discipline from SLIET or from any other polytechnic affiliated with any State Board of Technical Education and approved by All India Council for Technical Education (AICTE), are eligible to compete for admission to any of the Degree Programmes.

(b) Duration : The duration of Degree programme is 3 years.

(c) Disciplines : Available disciplines of study and information regarding distribution of seats are given below in **Table-III**.

(d) Admission Procedure: There are two categories of seats in this programme as given in **Table-III**.

(i) Vertical Entry Seats (ii) Direct Entry Seats

The admission procedure to these two categories is as under:-

(i) **Vertical Entry Seats (Only for SLIET students admitted in the year 2007):** There shall be vertical mobility of 50% of the students admitted (on the cut off date, i.e., 17.09.2007) in each Diploma programme of SLIET to Degree programme. The linkage between Diploma and Degree modules is illustrated in **Table-IV**. For vertical promotion from Diploma to Degree against these reserved seats, the Diploma students shall have to appear in the Entrance Test

(SET-V). The merit for vertical entry seats (i.e vertical promotion from Diploma course to Degree course for Diploma holders from SLIET) shall be prepared on the basis of 60% weightage of their score in the entrance test (SET-V) and 40% weightage of their score in their qualifying Diploma course provided that the student had got admission to Diploma course in 2007-2008 and not earlier and had completed the Diploma course in the prescribed period of normal study i.e. two years and by availing only prescribed chances to clear a subject. Prescribed chances to clear a subject are one regular and two supplementary chances. However, a student having supplementary in 4th semester i.e. the last semester, shall be given only one supplementary chance for the purpose of promotion to higher module.

Note: There shall be vertical mobility of 50% of the sanctioned strength of the students in each Diploma programme to Degree programme of SLIET for the students admitted / to be admitted in Diploma programmes in the year 2008 and there after.

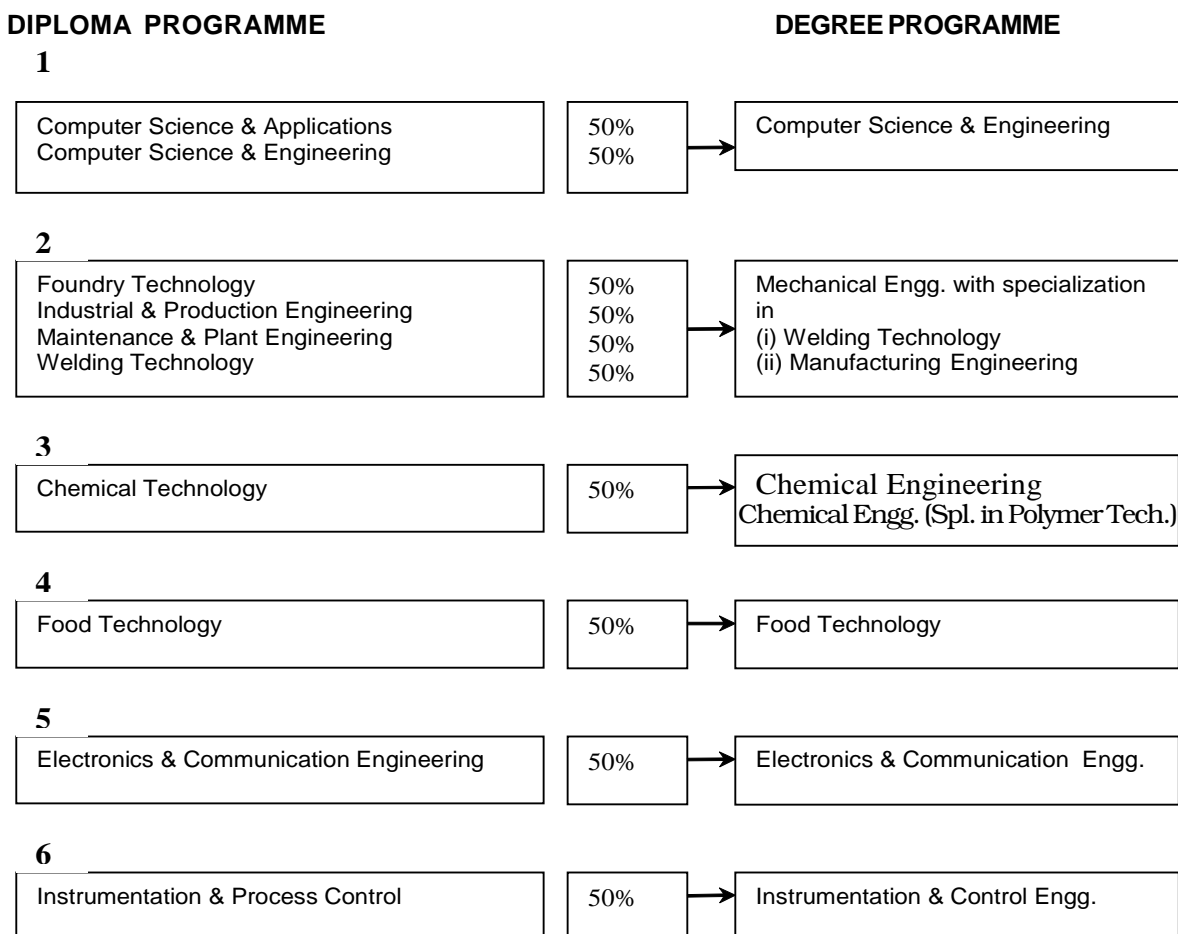
- (ii) **Direct Entry Seats (For outside candidates and SLIET students):** All candidates possessing entry qualification prescribed in clause 2.3(a) above are eligible to compete for direct entry seats for various Degree Programmes as per Table III. The admission to these seats is on the basis of merit of the National Level Entrance Test (SET-III) conducted by the institute for the Degree programme. The SLIET students admitted before 2007-2008 in Diploma shall also be eligible for admission against direct entry seats. Even a SLIET student admitted in Diploma programme in 2007-2008 is entitled to apply for admission under direct entry seat in any Degree programme but such a student shall not be considered for admission against direct entry seat in that Degree programme/specialisation which is available to him/her by way of vertical promotion. The SLIET students competing for direct entry seats shall have to appear in SET- III examination and shall be treated completely at par with the outside (Non-SLIETian) candidates for admission to this category of seats without any weightage to their score in the qualifying Diploma course.

TABLE-III Distribution of Seats for Degree Programme for the Academic Session 2009-10**

Sr. No.	Discipline	Sanctioned Seats	Seats for Vertical Entry	Seats for Direct Entry
1.	Chemical Engineering (Spl. in Polymer Tech.)	41	8	33
2.	Chemical Engineering	41	8	33
3.	Food Technology (GFT)	54	17	37
4.	Computer Science & Engineering (GCS)	82	34	48
5.	Electronics & Communication Engineering (GEC)	55	17	38
6.	Instrumentation & Control Engineering (GIN)	54	16	38
7.	Mechanical Engineering with specialization in: (a) Manufacturing Engineering (GME) (b) Welding Technology (GWT)	54	34	20
		54	33	21
8.	Information Technology (GIT)	41	00	41
	TOTAL	476	167	309

***10% seats over and above the sanctioned strength will be offered to NRI/NRI sponsored candidates (Latest instructions of Govt. of India shall apply at the time of admission) and admission to this category will be on the basis of merit of SET-III. However, if the seats in this category remain vacant then the candidates who did not appear in SET-III can also be considered and admission of such candidates against vacant seats shall be on the basis of the merit of qualifying examination.*

TABLE IV: Linkage between various Diploma and Degree Programmes for academic session 2009-2010



2.4 Principles applicable to all admissions i.e. Certificate/Diploma/Degree programme.

2.4.1 All admissions will be made on merit determined for admission. In case of tie among two or more candidates, candidate having higher marks in the qualifying examination shall be placed higher. In case of tie in the marks obtained in the qualifying examination also, the candidate who is older in age as per the relevant entry in the matriculation certificate, will be placed higher.

2.4.2 Reservation of Seats

- I) Seats to which reservation apply :** There shall be no reservation in case of admission by vertical promotion from certificate course to diploma course and diploma course to degree course. The reservation of seats shall be available only in the direct entry seats meant for admission to certificate/diploma/degree programmes.
- II) Extent of reservation :** The extent of reservation will be as under:-
 - a) For Scheduled Caste (S.C.) 15%
 - b) For Scheduled Tribes (S.T.) 7.5%
 - c) For Physically handicapped (PH) 3%
 - b) For other backward classes (OBC) 18%
 (OBC reservation will be available to non-creamy layer only. The details of non-creamy layer will be as per the stipulations set out hereunder).

2.4.3. Territorial Quota

Seats meant for certificate and diploma courses are bifurcated for the candidates of the State of Punjab and for the candidates belonging to other States respectively in the following proportion:

I. Certificate programme

Quota for Punjab State (excluding Chandigarh) 75%
 Quota for other states and U.T. (including Chandigarh) 25%

II. Diploma Programme

Quota for Punjab State (excluding Chandigarh) 50%
 Quota for other states and U.T. (including Chandigarh) 50%

THERE SHALL BE NO TERRITORIAL RESERVATION FOR ADMISSION TO DEGREE PROGRAMME.

2.4.4. Rules for operating reservation:

- (i) for operating reservation of seats, seats in the specialization in Mechanical Engineering and Chemical Engineering Degree programme, will be treated as falling in one degree programme.
- (ii) Candidates passing qualifying examination from Open National School or as a Private candidates will be entitled to claim territorial quota on the basis of their domicile.
- (iii) Seats remaining vacant for NRI/NRI sponsored category will not be shifted to any other category including general category.
- (iv) Seats remaining unfilled in OBC category will be offered to general category, subject, however, to the instructions of Govt. of India as may be applicable from time to time.
- (v) For applying to avail reservation under OBC category, the candidates will be required to submit adequate proof/certificate, issued by the competent authority as may be prescribed from time to time in evidence of his/her not belonging to creamy layer. The criteria of creamy layer will be applied as may be prescribed by the Govt. of India from time to time. At present Notification dated 13.10.2008 issued by the Ministry of Human Resource Development, New Delhi, prescribes that the candidates whose family income does not exceed Rs. 4.5 lacs per annum do not fall within the category of creamy layer. **The above proof/ Certificate should pertain to the year just preceding the year of SET Examination.**
- (vi) For claiming seats reserved for Physically Handicapped candidates, the minimum degree of disability should be 40%. Seats falling to the share of Physically Handicapped candidates in various branches are inter changeable depending upon the availability/suitability of candidates. However, in any branch (as well as in the total seats meant for direct entry) number of seats will not exceed the prescribed quota of 3%. To claim reservation under Physically Handicapped candidates category, the candidate is required to submit a certificate from the Chief Medical officer of the district concerned clearly mentioning about the extent/degree of disability. The admission to this category will be governed by the rules of Govt. of India/ State of Punjab as may be applicable from time to time. The decision of admission committee, regarding the suitability of a candidate for a particular branch for claiming reservation under this category, shall be final and binding on the candidates.
- (vii) The seats remaining vacant in any branch due to non availability/suitability of eligible candidates belonging to physically handicapped category will be shifted to general category in that branch.
- (viii) A candidate seeking admission against any reserved seat/ territorial quota if fails to get admission against the said reserved seat/quota for any reason, may immediately apply to the Chairman SET for consideration of his claim for admission in non-reserved category/quota. For considering the said claim, however, no separate call letter shall be issued to such candidates and he/she will have to appear in the counseling for filling up the seats other than reserved seats/quota at his/her own responsibility. The claim of such candidate shall be considered in order of his/her merit and his/her choice of trade/branch/specialization as well as availability of seats in the said trade/branch/specialization in the unreserved category/quota aforesaid.

2.5 M.B.A.

- (a) **Entry Qualification :** A recognized three years Bachelor's/Post-Graduate degree in any discipline with atleast 50% marks in aggregate or a pass in the final examination conducted by ICAI/ICWI/ICSI or AMIE with 50% Marks. Candidates appearing in final Degree examination are eligible to apply and can take the test provisionally. The candidates having valid CAT/MAT score will also be considered for admission but such candidates will have to appear in Group Discussion and Interview.
- (b) **Duration :** The duration of the M.B.A. programme is 2 years.
- (c) **Distribution of Seats:** Total number of seats is 30
NRI/NRI sponsored seats would be 10% over and above 30 seats. (Latest instructions of Govt. of India shall apply at the time of admission).
Reservation as mentioned at 2.4.2 (II) & 2.4.4 (IV, V, VI, VIII) shall be applicable.
Maximum seven seats out of 30 will be allocated for CAT/MAT candidates.

2.6 M.TECH. PROGRAMME:

The objective of M.Tech. programme is a continuation of technical expertise acquired in Degree Programmes. This will also offer the opportunity to the candidate to acquire skill to work on R&D projects and to promote industry institute interaction.

a) **Entry Qualifications:**

Admission to Master of Technology (M.Tech.) course will be open to a candidate who obtains at least 50% marks in the aggregate in qualifying examination and

holds a B.Tech./B.E. Degree of recognized University/Institute in appropriate branch. Entry Qualification for admission in various M.Tech. courses as under:

- (i) **Manufacturing System Engineering:** B.E./B.Tech. degree in Manufacturing Engineering/Mechanical Engineering/Production Engineering/Industrial Engineering or equivalent*.
- (ii) **Mechanical Engineering (Welding and Fabrication):** B.E./B.Tech. degree in Manufacturing Engineering/Mechanical Engineering/Production Engineering/Industrial Engineering or equivalent*.
- (iii) **Food Engineering & Technology:** B.E./B.Tech./M.Sc. degree in Food Technology/Food Engineering/Agricultural Engineering & Food Engineering or equivalent*.
- (iv) **Instrumentation and Control Engineering:** B.E./B.Tech. in Electrical Engineering or Instrumentation & Control or Electrical and Electronics Engineering or Instrumentation Engineering or Electronics Engineering or Computer Engineering or Electronics & Instrumentation Engineering or Electronics & Communication Engineering or equivalent*.
- (v) **Polymer :** B.E./B.Tech. in Polymer Technology or Chemical Engineering or relevant area or M.Sc. in Polymer or Chemistry with Physics, Chemistry and Mathematics at undergraduate level or equivalent*
- (vi) **Electronics & Communication Engineering :** B.E./B.Tech. in Electronics/Electronics and Communications Engineering or equivalent*.

(*The decision of admission committee regarding equivalency shall be final and binding on the candidate.)

- b) **Discipline:** Available discipline of study and information regarding the distribution of seats are given below.

INTAKE AND DISTRIBUTION OF SEATS

Name of M. Tech. Programme	Sanctioned Seats	For GATE/SET-VI qualified*	Sponsored
M. Tech. in Manufacturing Systems Engineering	34	22	12
M. Tech. in Mechanical Engg. (Welding and Fabrication)	25	16	09
M. Tech. in Food Engineering & Technology	34	22	12
M. Tech. in Instrumentation and Control Engineering	24	17	7
M. Tech. in Polymer	24	17	7
M. Tech. in Electronics & Communication Engineering	25	16	09

Reservation as mentioned at 2.4.2 (II) & 2.4.4 (IV, V, VI, VIII) shall be applicable.

- 10% seats over and above the sanctioned intake will be available for NRI/NRI sponsored candidate. (Latest instructions of Govt. of India shall apply at the time of admission)
- The vacant seats under industry/institute sponsored & NRI/NRI sponsored category shall not be shifted to any other category.
- There shall be no reservation or quota etc. on territorial basis for admission to M. Tech./P.G. Programmes.
- Rule 2.4.1 (a) will be applicable for M.Tech. Programme also.

- c) **Duration:** The duration of M.Tech. programme is Two Years

- d) **Admission Procedure:**

- i) Student with 50% marks in Degree programme is eligible for admission to M.Tech.programme.
- ii) Students aspiring to get admission in the Master degree Programmes need not to appear in the entrance examination SET-2009 provided they have valid GATE score and relevant engineering degree. Students having an engineering degree without GATE score or M.Sc. degree with or without valid GATE score (if eligibility exists for M.Sc.) have to appear in SET-2009. (SET-VI)
- iii) For admission to M.Tech. courses, first preference will be given to the students having valid GATE score and relevant engineering degree and their admission shall be made on the basis of merit of GATE percentile followed by interview.
- iv) If seats remain vacant then admission will be on the basis of SLIET entrance examination SET-VI.
- v) If still the seats remain vacant the admission shall be made on the basis of merit of degree programme.

2.7 Ph.D. Programmes: Students interested for admission in Ph.D Programme can directly contact to Head of the concerned departments. For more details, please refer to **Appendix-IV**.

2.8 IMPORTANT NOTES FOR ADMISSION TO ALL PROGRAMMES

Following points are highlighted and shall also be applicable to the admission to the concerned programme:-

- (a) Admission to the vertical entry seat shall be 50% of the admitted (on the cut off date i.e. 17.09.2007) strength of the students in a particular Certificate/Diploma in 2007-2008 and not earlier. If a student from promoted candidates do not claim admission in a trade or a seat falls vacant afterwards in a trade, then that seat will be offered to next eligible candidate in that trade.
- (b) A common merit list in respect of branches mentioned against **S.No.1 of Table-II** of all the vertically promoted students from Certificate to Diploma shall be prepared and the branches shall be allotted according to the merit and choice. Similarly, a common merit list in respect of branches mentioned against **S.No.2 of Table-II** of all the vertically promoted students from Certificate to Diploma shall be prepared and the branches shall be allotted according to the merit and choice.
- (c) If any seat (in the promotion quota) remains vacant/unfilled {after exhausting 2.8(a)} in **DIP, DMP, DFT and DWT** then a common merit list of all eligible candidates of **CAC, CAF, CTD, CFF and CWG** shall be prepared and vacant seats shall be allotted to the candidates on merit and choice from this common merit list. If any seat (in the promotion quota) remains vacant/unfilled in **DCE, DEC, DCA and DIN** then a common merit list of all eligible candidates of **CTV, CSME, CSMM, CCA and CMEE** shall be prepared and vacant seats shall be allotted to the candidates on merit and choice from this common merit list.
- (d) By exhausting the above possibilities at **2.8(c)**, if still any vertical entry seat remains vacant in any Diploma programme, then a common merit list of remaining eligible candidates of SET-IV of all Certificate Programmes shall be prepared and vacant vertical entry seats will be allotted on the basis of the merit and choice.
- (e) A common merit in respect of the branches mentioned against **S.No. 2 of Table-IV** shall be prepared wherein all the vertically admitted students shall be pooled together and specialisation (i.e Manufacturing Engineering or Welding Technology) shall be allotted as per choice and merit list prepared on the basis of 60% weightage to Entrance Test (SET-V) and 40% weightage to the score in the qualifying Diploma programme.
- (f) In case the vertical entry seat of any degree programme remain unfilled by promoting 50% of the students in the given diploma course as per linkage schedule given in **Table-IV** a common merit of all the feeder diploma courses shall be prepared to fill up the unfilled seats meant for vertical entry. Despite of this exercise, if seats prescribed for vertical entry remain unfilled in any degree programme then a common merit shall be prepared amongst the eligible students of diploma Programmes of all the trades.
- (g) The seats prescribed for direct entry and vertical entry are not interchangeable in any case whatsoever that may be.
- (h) Only those candidates, who possess the result of qualifying examination at the time of their turn (in order of merit in SET) during counseling, will be considered for admission as per the availability of the seats and their choice. However, a candidate who is not in possession of result of the qualifying examination at the time of his turn during the counseling and gets the result subsequently, may apply to the Chairman SET alongwith the result of the qualifying examination for permission to participate in the next available counseling. He/she will, however, not be issued any fresh call letter and will be entitled to participate in the next counseling in the absence of any fresh call letter. His/her claim for admission will be considered in order of their merit in the SET examination, his/her choice and as per the availability of seats at the time of his/her turn in the said subsequent counseling.
- (i) There will not be any negative marking.

Note :

By exhausting the above possibilities at 2.8 (d) and 2.8 (f), if still some vertical entry seats remain vacant in any diploma and degree programme respectively, then such seats can be offered to those students who become eligible even by availing more than prescribed number of chances as mentioned in 2.2 (d) (i) [page no.9] and 2.3 (d) (i) [page no.10] respectively. However, such candidates shall have no claim on the seats offered to the students through the procedure 2.8(b) to (d) and 2.8(e) to (f) respectively.

2.9 WITHDRAWAL FROM ADMISSION

A candidate after taking admission in the institute may withdraw his/her admission with a written request to the Chairman SET-2009. However, a separate application has to be submitted in the required format for the withdrawal of the refundable money after depositing Rs.10/- in the accounts section.

CHAPTER-III

SLIET ENTRANCE TEST – 2009 & FEE STRUCTURE

3.1 SLIET ENTRANCE TEST-2009

Entrance Test conducted for admission to Certificate, Diploma, Degree and PG programme is termed as SLIET Entrance Test-I (SET-I), SLIET Entrance Test-II (SET-II), SLIET Entrance Test-III (SET-III) and SLIET Entrance Test-VI (SET-VI), respectively.

The separate entrance test for admission to vertical entry seats of Diploma and Degree programme for SLIET students shall be termed as SLIET Entrance Test-IV (SET-IV) and SLIET Entrance Test-V (SET-V), respectively and shall be conducted only for the SLIET students on a separate date (June 20, 2009).

3.1.1. Pattern Of Examination :

- **SET-I** will have two papers each of two hours duration. Paper-I will include English, General Awareness & Mathematics and Paper-II will pertain to Physics and Chemistry.
- **SET-II** will have two papers. Paper-I will include English and Mathematics and Paper-II will include Physics & Chemistry, each of two hours duration.
- **SET-III** shall have two papers each of two hour duration. Paper-I will pertain to English, General Knowledge, Mental Aptitude, Mathematics, Physics and Chemistry. Paper-II will pertain to Basics of Engineering.
- **SET-IV** shall have two papers each of two hours duration. Paper-I will include Physics, Chemistry, Mathematics & English studied in Certificate programme and Paper-II will include branch syllabi studied in Certificate programme.
- **SET-V** shall have two papers each of two hours duration. Paper-I will pertain to Mathematics, General Knowledge and Mental Aptitude. Paper-II will pertain to one of the disciplines viz; (i) Computer Science & Engineering (ii) Electronics & Communication Engineering; (iii) Instrumentation Engineering (iv) Mechanical Engineering; (v) Chemical Technology and (vi) Food Technology.
- **SET-VI** will have only one paper related to the concerned M.Tech. & MBA programme and shall be of two hours duration.

The Syllabi and distribution of marks for SET-I, SET-II, SET-III and SET-VI are given in the Chapter-IV, V, VI and VII respectively. Syllabus of SET-IV and SET-V will be available separately from **SET OFFICE** alongwith information broucher of SET-2009. The syllabus can also be downloaded from the institute website www.sliet.ac.in.

Note : Question paper in all above examinations will have objective types questions with multiple choice.

3.1.2. Schedule Of Test :

Test	Date	Time	Paper
SET-I	6.6.09	10.00-12.00 Hrs 14.00-16.00 Hrs.	Paper-I Paper-II
SET-II	6.6.09	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
SET-III	6.6.09	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
SET-IV	20.6.09	10.00-12.00 Hrs. 14.00-16.00 Hrs	Paper-I Paper-II
SET-V	20.6.09	10.00-12.00 Hrs. 14.00-16.00 Hrs	Paper-I Paper-II
SET-VI	6.6.09	10.00-12.00 Hrs. 14.00-16.00 Hrs	M.Tech M.B.A.

3.1.3. Centres of SET-2009 : (Numbers before the name of the city in following table indicate centre code)

01 Agra	02 Agartala	03 Amritsar	04 Bangalore	05 Barnala
06 Bathinda	07 Bhagalpur	08 Bhopal	09 Bhubaneswar	10 Chandigarh
11 Chennai	12 Darbanga	13 Dehradun	14 Delhi	15 Faridabad
16 Ferozepur	17 Gandhinagar	18 Gangtok	19 Gorakhpur	20 Gurdaspur
21 Guwahati	22 Hamirpur	23 Hyderabad	24 Imphal	25 Itanagar
26 Jaipur	27 Jalandhar	28 Jammu	29 Kolkata	30 Kurukshetra
31 Longowal	32 Lucknow	33 Ludhiana	34 Mansa	35 Meerut
36 Mumbai	37 Nagpur	38 Patiala	39 Patna	40 Panaji
41 Ranchi	42 Ropar	43 Sangrur	44 Shillong	45 Shimla
46 Trivandrum	47 Varanasi			

Note : If sufficient no. of candidates are not available at any centre, Director, SLIET, reserves the right to scrap that centre and allot any other centre to the candidate without assigning any reason.

3.1.4. Application Fee :

Each application must accompany an application fee of Rs.500/- (Rs.250/- for SC/ST) in the form of crossed Demand Draft drawn in favour of **THE DIRECTOR, SLIET, payable at Longowal or Sangrur** or Cash Receipt of the Institute. Demand Draft should preferably be of Oriental Bank of Commerce or Central Bank of India or Punjab National Bank or State Bank of India payable at Longowal/Sangrur. Application without fee shall be rejected.

3.1.5. Admit Cards :

Admit Cards will be issued only to those eligible candidates who have submitted the application form complete in all respects and with requisite fee before the closing date. The admit card shall be despatched Under Postal Certificate (UPC) and the Institute shall not be held responsible for any postal delay or irregularity leading to the applicant not receiving the admit card in time. The admit card will bear the name of the candidate, father's name, roll number, application number, address of the examination centre allotted, name of the SET Examination and the examination schedule. The candidate should carefully examine the admit card received by him/her for all the entries made therein. If the admit card is not received/ found incomplete in any way, the candidate should contact/inform the issuing authority immediately but not later than 1.6.2009.

The roll number is the prime mean of locating the application and it should always be quoted in all correspondence & enquiry.

No applicant will be permitted to enter the examination hall without a valid admit card. The admit card should be preserved carefully till the admissions for the session 2009-10 are over.

3.1.6. Merit List For Direct Entry Seats : Applicable for Certificate/ Diploma/ Degree Programmes:

A candidate has to obtain a minimum marks in aggregate for inclusion in the merit list. Candidate who fails to appear in one or any of the two papers will not be included in the merit list.

For admission in certificate/diploma/degree programme a common merit list for each programme shall be prepared and the candidates will be allotted trade/branch/specialization as per his/her merit and choice and the availability of seats in the said trade/branch/specialization of the programme.

For Admission in M.Tech. programme; there will be a separate merit list (of all categories) i.e. for (i) Food Engineering & Technology, (ii) Instrumentation & Control Engineering, (iii) Manufacturing System Engineering, (iv) Polymer (v) Electronics and communications Engineering, (vi) Welding and Fabrication and (vii) MBA. Candidate who qualifies in the Entrance Test (SET-VI) will be admitted in the same Programme in which he/she has appeared. For example a candidate who qualifies the test by appearing in Food Engineering & Technology will be eligible for admission to P.G. Programme in Food Engineering & Technology only as per his/her merit and not in any other programme.

The list of qualified candidates as per their admit card number and rank/merit will be displayed on the notice board of the Institute on July 01, 2009. **Result will also be available on Institute Website : <http://www.sliet.ac.in>.** Request for marks and re-evaluation of the answer sheets will not be entertained.

3.1.7. Counselling :

The exact schedule of counseling will be displayed on the website of the Institute, namely, <http://www.sliet.ac.in>. Additionally, the candidates will be informed about the counseling schedule by way of call letter sent under UPC and the institute shall not be responsible for any postal delay or non receipt of such call letter due to any reason whatsoever. However, if a candidate fails to attend counseling in time due to non receipt of the call letter or for any other valid reason, he may apply to the Chairman SET for permission to participate in the next available counseling. Such candidate will have to keep track of the next available counseling and participate therein without waiting for any fresh call letter or intimation in this behalf. His/her claim in such subsequent counseling in which he/she may participate may be considered in accordance with his/her merit/choice and availability of seats in a particular trade/branch/specialization during the said subsequent counseling.

3.1.8. Medium of Examination:

The medium of entrance examination SET-II, SET-III, SET-IV, SET-V & SET-VI, will be English. However, candidates appearing for the entrance test for Certificate Programme (SET-I) may answer the questions of Physics, Chemistry & Mathematics in English/ Hindi / Punjabi. Question Papers for these subjects will be provided in English, Hindi and Punjabi.

3.2 GENERAL INFORMATION :

3.2.1. Candidate appearing in the Entrance Test for admission is allowed provisionally, subject to production of his/her Certificate having passed the qualifying examination on or before the day of counselling of the concerned programme, failing which his/her candidature shall be deemed to have been cancelled.

3.2.2. Selection for admission is made strictly on the basis of merit determined in SLIET Entrance Test conducted separately for Certificate, Diploma, Degree and M.Tech. Programmes except for those students who are having valid GATE score and relevant engineering degree.

3.2.3. Semester system will be followed for Certificate, Diploma, Degree & PG Programmes

3.2.4. Academic Calendar and study scheme alongwith syllabi shall be given to all the admitted students before/during start of the classes.

3.2.5. The medium of instructions is English for all the Programmes.

3.2.6. It is expected that the applicants will have good general physique with chest measurement not less than 70cm. with satisfactory limits of expansion and normal vision and hearing. In case of defective vision, it must be corrected to 6/9 in both eyes or 6/6 in the better eye. Defective hearing should also be corrected. There should not be any

abnormality in heart and lungs and history of mental disease /chronic disease and epileptic fits. The candidate must attach a medical certificate of fitness from a Govt. Doctor not below the rank of A.M.O.

3.2.7. Scholarships are provided to the meritorious candidates as per norms of Government of India.

3.3 FEE STRUCTURE FOR ACADEMIC YEAR 2009-2010

FEE PARTICULARS	Certificate	Diploma	Degree	PG (M.Tech., M.B.A)
A. REFUNDABLE FEES: (Without any interest)	Rs.	Rs.	Rs.	Rs.
Caution Money Institute/Hostel/Mess	5000	5000	5000	5000
B. NON-REFUNDABLE FEE:				
Admission Fee	250	250	500	500
Registration Fee	200	200	725	725
Identity Card	50	50	50	50
Convocation Fee	100	100	100	100
Swimming Pool Fee	70	70	160	160
Transport Fees	50	100	300	300
Student Welfare Fund	600	1000	1200	1200
Medical Fee	60	60	300	300
Training & Placement Activity Fund	250	300	400	400
Magazine Charges & Library Activities	60	60	600	600
Book Bank	100	150	200	200
Cable T.V. Charges	150	150	150	150
Syllabus Charges	60	60	120	120
Library Fee	-	100	300	300
Students Activity Related Fund	-	925	2030	2030
Alumni Association Fee	-	-	150	150
Total	2000	3575	7285	7285
C. OTHER FEE (PER SEMESTER (Non-refundable))				
Institute Development Fund	500	500	1500	1500
Computer Development Fund	450	450	500	500
Tuition Fee***	1500	3000	15000	8000**
Sports Fee & Extra Curricular Activities Fee	90	90	300	300
Grade Card	15	15	15	15
Examination Fee (Periodical Test Fee)	300	300	500	500
Hostel Seat Rent & Common Room Charges	300	300	600	600
Electricity & Water Charges	475	475	560	560
Hostel Establishment Charges	-	-	350	350
Internet Charges	600	600	600	600
Contingency Charges (for Non GATE students)				2500
Total	4230	5730	19925	15425
GRAND TOTAL (A+B+C)	11230	14305	32210	27210##
				25210#
# For GATE Candidates ## For Non-GATE Candidates				

The following fee shall be charged as applicable:

Additional membership fee

Late Fee for Registration

to next Semester/Trimester Rs. 1000.00

Re-admission Fee

Rs.200.00

Supplementary Examination Fee Rs. 200.00

For Industry sponsored students the tuition fee shall be Rs.20,000/- per semester.

***For NRI/NRI sponsored candidates the tuition fee and institute Development Charges shall be as follows:

	Tuition Fee	Institute Development Charges
Diploma	US \$ 800 per annum	US \$ 500 per annum
Degree/M.Tech.	US \$ 5000 per annum	US \$ 1000 per annum

Note: The fee structure may be revised from time to time with the approval of competent authority.

CHAPTER-IV
SYLLABUS OF SLIET ENTRANCE TEST SET-I
FOR ADMISSION TO CERTIFICATE PROGRAMME, 2009

PATTERN OF SET- I :

SLIET Entrance Test SET-I for admission to Certificate Programme will consist of two papers each of two hours duration.

Paper-I : This paper will have 100 objective type questions of 100 marks from English, General knowledge, Mental Aptitude and Mathematics.

Paper-II: This paper will also consist of 100 objective type questions of 100 marks from Physics and Chemistry.

Note : *In both the papers candidate is required to attempt all the questions. Answers of all the objective type questions are to be filled in the OMR answer sheet given separately. There will not be any negative marking.*

SYLLABUS AND MODEL QUESTIONS :

PAPER I

Marks : 100

Time : 2 Hours

English, General Knowledge, Mental Aptitude

Marks: 25 (25 Questions)

Syllabus :

1. Usage of Tenses
2. Fill in the Blanks with prepositions
3. Active Passive Voice
4. General Knowledge/Awareness
5. Aptitude Test

MATHEMATICS

Marks 75 (75 Questions)

Syllabus :

ALGEBRA : Integers, rational and irrational numbers, ratio and proportions. Polynomials, GCD and LCM of Polynomials by factorization method. Linear equations in one variable; solution of simultaneous equations. Quadratic equations and their solutions. Law of indices.

TRIGONOMETRY: Trigonometric ratios-sin x, cos x, tan x, cot x, cosec x and sec x for 0°, 30°, 45°, 60° and 90°. Trigonometric Identities. Use of Trigonometric tables. Simple problems on heights and distances.

MENSURATION : Perimeter and area of a triangle, square, rectangle, rhombus, trapezium, quadrilateral and circle. Volume and surface area of cube, right prism, cylinder, cone and sphere.

GEOMETRY : Point, line, collinear points, intersecting and non-intersecting lines in a plane. Family of lines, concurrent lines, distance between two parallel lines. Angle-acute, obtuse and right angles. Triangle, its sides and angles. Similarity of triangles. Congruence of triangles. Pythagoras theorem and its converse. Circle. Diameter and circumference of a circle. Arc and sector of a circle. Chord and segment of a circle. Tangent to a circle. Family of concentric circles. Direct and transverse common tangents. Centroid, and orthocentre.

STATISTICS : Collection and tabulation of statistical data. Graphical representation of statistical data, Bar diagram, histograms, pie-charts. Measures of central tendency (Mean, median, mode).

Objective Type Questions :

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q.1 The name of the city which is known as a pink city.

(a) Chandigarh (b) Mumbai (c) Jaipur (d) Delhi

Q.2 In a right angled triangle the sides perpendicular to each other are 15 cm and 8 cm. Its perimeter is :

(a) 46 cm (b) 60 cm (c) 120 cm (d) 40 cm

PAPER- II (PHYSICS AND CHEMISTRY)

Marks: 100

Time: 2 Hours

PHYSICS

Marks : 50 (50 Questions)

Syllabus :

Motion : Uniform and non-uniform motion (qualitative idea only), displacement, speed and velocity, acceleration, equations of motion.

Force : Definition, Inertia of a body, balanced and unbalanced forces, acceleration, relationship between force, acceleration and mass of an object, action and reaction of forces.

Gravitation : Laws of gravitation, acceleration due to gravity.

Work : Work done by a force, relation between work and energy, kinetic energy and potential energy.

Wave Motion : Nature of wave, propagation of a wave through a medium, type of waves; longitudinal, transverse, simple harmonic motion (graphical representation), amplitude of wave, relationship between wave length, frequency and velocity of wave.

Light : Perception of energy carried by light waves, human eye structure and function of human eye, focal length of eye-lens, image formation on the retina, perception of colour-composition of white light.

Heat : Mechanical work and heat, heat and temperature, measurement of temperature, specific heat, thermal expansion, change of state, idea of latent heat, idea about relative humidity.

Electricity : Conductors and resistors, measurement of current, potential difference and resistance. Heating effect of electric current, quantitative relationship between heat, current, resistance and time of flow of current, electric appliances based on heating effect of current, measurement of electric energy, units of electric power and energy.

Magnetic effects of Electric Current : Magnetic field of a current carrying conductor, coil and solenoid, electric motor & its applications, Electromagnetic induction.

Reference Book : Science: for Class-IX and X, Published by NCERT.

Objective Type Questions :

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q.1 The least distance of distinct vision of normal eye is

(A) 30 cm (B) 25 cm (C) 15 cm (D) 20 cm

Q.2 To remove hypermetropia, lens used is

(A) concave (B) convex (C) cylindrical (D) plano-concave

CHEMISTRY

Marks: 50 (50 Questions)

Syllabus :

Matter-Nature and Behaviour : Nature and behaviour of different types of substances, elements, compounds and their mixtures, structure of matter, atomic theory, molecules and atom; Structure of atom-electrons, protons and neutrons; composition of nucleus-atomic number and mass number, distribution of electrons in different energy levels in an atom, valence electrons and valency.

Atomic Mass and Molecular Mass: Mole concept; percentage composition of compounds.

Physical and Chemical Changes: Combination, displacement, decomposition, slow, fast, exothermic and endothermic reactions, catalyst; chemical equations.

Electrochemical Cell: Construction and working of a simple voltaic cell; lead storage battery and dry cell; electrolysis-movement of ions during electrolysis; Faraday's Laws; electroplating.

Classification of Elements: Periodic Law, periods & groups; General trend in properties of elements in periodic table.

Fuel : Type of fuels, coal; natural fuels, conditions for combustion, heat produced during combustion, combustion of food in living organisms.

Mineral Cycles : Carbon cycle, role of carbon and its compounds, nitrogen cycle, nitrogen fixation, oxygen cycle, oxidation process, water cycle, role of energy in different cycles.

Water : Water a natural resource, origin of life in it, a medium for the activity of the living, a solvent, uses, saturated and unsaturated solution, sea water as habitat of organism, salts from sea.

Air : Composition, Atmosphere & its role on radiation, Carbon dioxide and its diverse effects on living organism, role of trees, release of carbon dioxide from fossils, fuels and automobiles, corrosion of metals, damage of historical monuments from acidic gases, effect of metallic particles, asbestos, etc., on living organisms. Carbon monoxide and its ill effects, air pollution and its effects on human beings.

Dependence of Man on Natural Resources : Minerals from earth, metals and non-metals, uses of non-metals.

Carbon and its Compounds : Introduction, allotropes of carbon and their occurrence, structure, related properties and uses; hydrocarbons their elementary structure, properties and uses; isomerism (elementary idea); simple compounds of carbon, hydrogen and oxygen and their uses; petroleum products; introductory account of synthetic fibres, plastics, rubber, soaps and detergents.

Extraction of Metals : Metals and non-metals (Si, P,S) occurrence, properties and uses; general metallurgical operations for extraction of pure metal (extraction of copper, iron and aluminum). Properties of metals, uses of metals and non-metals; properties of some alloys (brass, gunmetal, German silver, Solder, bronze) uses at home and in industry.

Reference Book : Science-A Text Book for Class IX & X, Published by NCERT.

Objective Type Questions

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q.1 Isotopes of an atom have

- (A) same mass number (B) different atomic number
(C) same atomic number (D) none of the above

Q.2 Chemical name of baking soda is

- (A) sodium chloride (B) sodium carbonate
(C) sodium bicarbonate (D) none of above

CHAPTER -V

SYLLABUS OF SLIET ENTRANCE TEST SET-II FOR ADMISSION TO DIPLOMA PROGRAMME, 2009

PATTERN OF SET-II

SLIET Entrance Test SET-II for admission to Diploma Programme will consist of two papers each of two hours duration.

Paper-I : This paper will have 100 objective types questions of 100 marks from English, General Knowledge and Mathematics.

Paper-II : This paper will also consist of 100 objective type questions of 100 marks from Physics and Chemistry.

Note: *In both the papers candidate is required to attempt all the questions. Answers of the objective type questions are to be filled in the OMR answer sheet given separately. There will be no negative marking.*

SYLLABUS AND MODEL QUESTIONS

PAPER- I

Marks: 100

Time : 2 Hours

ENGLISH AND GENERAL KNOWLEDGE

Marks: 25 (25 Questions)

Syllabus :

1. General Science
2. Idioms and Phrases
3. Events of National & International Importance
4. Fill in the blanks with suitable words/prepositions
5. Correction of sentences
6. Change of Voice
7. Current Events
8. Indian National Movement
9. History of India

MATHEMATICS

Marks: 75 (75 Questions)

Syllabus :

Algebra : Solution of quadratic equations, relationship between their roots and coefficients. Equations reducible to quadratic form. Symmetric Functions of roots. Formation of a quadratic equation with given roots. Arithmetic progression, Geometric progression and Arithmetico-Geometric series. Series of natural numbers ($\sum n$, $\sum n^2$, $\sum n^3$). Mathematical induction. Permutations and Combinations, Binomial theorem for any index. Complex numbers. Algebra of complex numbers. Modulus and argument of a complex number. Conjugate of a complex number. Triangle inequality representation of complex number in Geometric form, polar form & exponential form. Square Root of a complex number. Cube roots of unity. De-Moivre's Theorem with simple applications. Vectors, their Scalar product and cross product. Scalar triple product and its applications.

Trigonometry : Trigonometric ratios and their relations. Trigonometric Identities. T-ratios of allied angles. Addition and Subtraction formulae. Transformation of product into sum or difference and vice-versa. T-ratios of multiple and sub-multiple angles. Inverse trigonometric functions. Solution of trigonometric equations. Relations between sides & Trigonometrically ratios of the angles of a triangle. Solution of triangles. Heights and distances.

Matrices and Determinants : Determinants of order 2 and 3, their elementary properties. Cramer's rule. Definition of a matrix. Types of matrices. Equality of matrices. Operations on matrices. Symmetric & Skew Symmetric matrices. Singular and non-singular matrices. Minors and cofactors. Adjoint and inverse of a matrix. Application of matrices in solving simultaneous linear equations in 2 and 3 variables.

Coordinate Geometry : Rectangular Cartesian co-ordinates. Distance between two points. Section formulae. Locus of a point. Equation of a straight line in various forms. Angle between two given lines. Condition for two lines to be parallel or perpendicular. Distance of a point from a line. Line through point of intersection of two given lines. Concurrency of lines.

Equation of a circle in various forms. Intersection of a circle with a straight line. Equations of tangent and normal to a circle. Intersection of two circles. Parametric representation of equation of a circle. Equations of the parabola, ellipse and hyperbola in the standard forms & parametric form. Condition for $y = mx + c$ to be a tangent and point of tangency.

Calculus : Function, its domain and range. Limit, continuity and differentiability of a function. Derivative of sum, difference, product and quotient of two functions. Derivative of algebraic, trigonometric, exponential, logarithmic, hyperbolic and Inverse trigonometric functions. Chain rule. Derivative of functions expressed in implicit and parametric forms. Logarithmic differentiation. Tangents and Normals. Rate measure & error. Maximum and Minimum values of a function. Integration as the inverse process of differentiation. Integration by parts, by substitution and by partial fractions. Integration of rational and irrational functions. Definite integral and its application for the determination of area (simple cases). Trapezoidal & Simpson Rules.

Objective Type Questions

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q.1 The house burnt for hours before the blaze was put.....

(a) off (b) away (c) out (d) up

Q.2 nth derivative of a^x is:

(a) a^x (b) $a^x \log a$ (c) a^{nx} (d) $a^x(\log a)^n$

PAPER-II (PHYSICS AND CHEMISTRY)

Marks:100

Time: 2 Hours

PHYSICS

Marks: 50 (50 Questions)

Syllabus :

Units and dimensions, SI Units, displacement, velocity, acceleration. Projectiles, circular motion, concepts of relative motion; Newton's Law of motion, concepts of uniformly accelerated frames, momentum, frictional force and gravitational force, work, energy, power, conservation of momentum and energy. Universal law of gravitation, gravitational potential and fields, acceleration due to gravity. Angular momentum, torque, equilibrium of rigid bodies. Hook's Law, Young's modulus, shear and bulk moduli, Bernoulli's theorem and its applications. Simple concept of amplitude, frequency and phase, longitudinal and transverse waves, harmonic and wave motions, superposition of waves, progressive and stationary waves, vibration of strings and aircolumns, resonance, beats. Velocity of sound, Echoes, Doppler effect. Thermal expansion of solids, liquids and gases. Kinetic theory of gases, specific heats, Isothermal and adiabatic process, laws of thermodynamics & their applications, Stefans law and Newton's law of cooling, Coulombs law, electric fields and electric potentials, lines of forces. Capacitance, dielectric constant, parallel plate capacitor, capacitor in series and parallel, energy stored in capacitor, charging and discharging of capacitors. Electric current, Ohm's law, series and parallel arrangements of resistance and cells. Kirchoffs law and its applications to network, heating effects of current. Biot Savarts law and its application. Force on a moving charge and on a current carrying wire in magnetic field. Magnetic moment of a current loop, effect of a uniform magnetic field on current loop, moving coil galvanometer, voltmeter, ammeter. Electromagnetic induction, Faradays and Lenz's law, definitions of self and mutual-inductance. Rectilinear propagation of light. Reflection and refraction at plane and curved surface, total internal reflection and critical angles. Deviation and dispersion of light by a prism. Thin lens, combinations of mirror and lens, magnifications, microscope, telescope.

Wave nature of light, interference, diffraction and polarization, Radioactivity, alpha, beta and gamma radiations, laws of radioactivity, decay constant, half life and mean life. Photoelectric effect. Bohr's theory of hydrogen like atoms, x-rays production and properties. Atomic nucleus, binding energy and its calculation. Fission and fusion processes.

Elementary concepts of thermionic emission and work function, diode valve as a rectifier, Elementary ideas of conductor, semi-conductor and insulator, intrinsic and extrinsic semi-conductor, P-N junctions as a rectifier.

Reference Book : Physics Class XI and XII Published by NCERT.

CHEMISTRY

Marks : 50 (50 Questions)

Syllabus :

Atomic Structure & Classification of Elements: Rutherford's Model, spectra of hydrogen atom, Bohr's model, quantum numbers, Pauli's exclusion principle, Hund's rule, Aufbau principle, electronic configuration of elements, shapes of s,p and

d orbitals. Periods and groups, classification of elements with respect to s, p and d-block, periodicity in properties, namely atomic and ionic radii, ionization energy, electronegativity and oxidation states.

Stoichiometry : Calculations involving common oxidation reduction, neutralization and displacement reactions, use of mole concept.

Behaviour of Gases : Avogadro's Law, equation of state and ideal gas, Vander waal's equation, diffusion of gases, kinetic theory of gases, average, root mean square and most probable velocity and their relation with temperature, Gay Lussac's Law.

Solutions : Expressing concentration in terms of mole fraction, molality, molarity and normality, Raoult's Law and molecular weight determination from lowering of vapour pressure.

Chemical Equilibrium, Kinetics and Energetics: Law of mass action, equilibrium constants K_c , K_p and their relationships, Le- Chatelier's principle and its applications, ionic equilibria in aqueous solutions, solubility product, common ion effect, acid-base theories (Bronsted and Lewis), hydrolysis of salts, pH, buffer solutions. Rate of reaction, order of reaction, molecularity, rate constant and half-life period of first order reaction, variations of rate constant with temperature (Arrhenius equation). Heat of formation, heat of combustion and heat of reaction, Hess's Law, bond energy.

Electrochemistry : Faraday's Law of electrolysis, galvanic cells, cell reactions, Nernst equation, standard potential, and electrochemical series, e.m.f. of cells involving the following electrodes only: Zn/Zn^{++} , Fe^{++}/Fe^{+++} , Sn/Sn^{++} , $(Pt)H_2/H^+, Cl_2(Pt)$.

Ores and Minerals : Commercially important ores of iron, tin, silicon, aluminum, lead, iron, copper, silver and zinc with their extractive metallurgy (chemical principles and reactions only, industrial details excluded). i) Carbon reduction method (iron and tin); ii) Self reduction method (copper and lead); iii) Electrolytic reduction method (magnesium and aluminium); iv) Cyanide process (silver). Transition elements (only the first series) definition, general characteristics properties viz. variable oxidation states, colour [details of electronic transition excluded], paramagnetism, [formation of complexes, stereochemistry excluded].

Preparation and Properties of the following Compounds : Oxides, hydroxides, carbonates, bicarbonates, chlorides and alums, oxides and chlorides of tin and lead, ferrous sulphate, Mohr's salt, ferric oxide and ferric chloride, copper sulphate, oxide and sulphate of zinc, silver nitrate and silver bromide. Hydrogen peroxide, carbon oxides and carbides, silicones and silicone carbides, nitrogen and phosphorous, oxides and oxy acids of ammonia, fertilizers, sulphur oxides, sulphurous and sulphuric acids, sodium thiosulphate and hydrogen sulphide, halogens, oxyacids of chlorine, bleaching powder.

Isolation, Preparation and Properties of Non-Metals : Silicon, nitrogen, phosphorous, oxygen, sulphur, fluorine, chlorine, bromine and iodine (properties of allotropes of carbon, preparation and properties of ozone included).

Alkanes, Alkenes Alkynes and Benzene: Preparation of alkanes (Wurtz reaction and decarboxylation reaction), substitution reaction of alkanes (including mechanism). Preparation by dehydrohalogenation of respective alkyl halides and by dehydration of alcohols, addition reactions (Markownikoff's and anti-Markownikoff's rule including mechanism, ozonolysis). Benzene structure, properties, nitration, sulphonation, halogenation, acylation and alkylation reactions, effect of o-, p- and m- directing groups in monosubstituted benzenes.

Characteristics Reactions of following Organic Compounds: Alcohols (esterification, dehydration, oxidation, reactions with sodium, phosphorous halides and zinc-chloride/conc.HCl), phenols (halogenation, nitration, sulphonation and Reimer-Teimann reaction), aldehydes and ketones (oxidation, reduction, oxime and hydrazone formation, aldol condensation, Cannizaro's reaction, haloform and Grignard reactions).

Objective Type Questions

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q.1 The instrument which measures temperature by radiation is called :

- (a) Thermopile (b) Thermometer (c) pyrometer (d) Galvanometer

Q.2 The reaction of formation of ethyl alcohol from ethylbromide in the presence of aq. KOH is

- (a) Addition reaction (b) Elimination reaction (c) Substitution reaction (d) None of these

CHAPTER -VI

SYLLABUS OF SLIET ENTRANCE TEST SET-III FOR ADMISSION TO DEGREE PROGRAMME, 2009

PATTERN OF SET-III

SLIET Entrance Test SET-III for admission to Degree Programme will consist of two papers each of two hours duration.

Paper-I : This paper will have 100 objective type questions of 100 marks from English, General Knowledge, Mental Aptitude, Mathematics, Physics and Chemistry.

Paper-II : This paper will also consist of 100 objective type questions of 100 marks from Basics of Engineering.

Note : *In both the papers candidate is required to attempt all the questions. Answers of the objective type questions are to be filled in the OMR answer sheet given separately. There will not be any negative marking.*

SYLLABUS AND MODEL QUESTIONS

PAPER-I

Marks: 100

Time: 2 Hours

GENERAL KNOWLEDGE, MENTAL APTITUDE & ENGLISH

Marks: 25 (25 Questions)

Syllabus :

The paper will include questions covering the following topics:-

1. General Science
2. Current events of National and International importance
3. History of India
4. Indian Politics and Economy
5. Indian National Movement and also General Mental ability
6. Idioms/Phrases
7. Usage of Tenses

MATHEMATICS

Marks: 25

(25 Questions)

Syllabus :

Algebra : Solution of quadratic equations, relationship between their roots and coefficients. Equations reducible to quadratic equation. Symmetric Functions of roots. Formation of a quadratic equation with given roots. Arithmetic progression, Geometric progression and Arithmetico-Geometric series. Series of natural numbers ($\sum n$, $\sum n^2$, $\sum n^3$). Mathematical induction. Permutations and Combinations. Binomial theorem for any index.

Trigonometry : Trigonometric ratios and their relations. Trigonometric Identities. T-ratios of allied angles. Addition and Subtraction formulae. Transformation of product into sum or difference and vice-versa. T-ratios of multiple and sub-multiple angles. Heights and distances. Solution of Trigonometric Equations. Solution of Triangles.

Coordinate Geometry : Rectangular Cartesian coordinates. Distance between two points. Section formulae. Locus of a point. Equation of a straight line in various forms. Angle between two given lines. Condition for two lines to be parallel or perpendicular. Distance of a point from a line. Line through point of intersection of two given lines. Concurrency of lines. Equation of a circle in various forms including parametric form. Intersection of a circle with a straight line. Equations of

tangent and normal to a circle. Intersection of two circles. Equations of the parabola, ellipse and hyperbola in the standard forms & parametric forms.

Calculus : Function, its domain and range. Limit, continuity and differentiability of a function. Derivative of sum, difference, product and quotient of two functions. Derivative of algebraic, trigonometric, exponential, logarithmic, hyperbolic and Inverse trigonometric functions. Chain rule. Derivative of functions expressed in implicit and parametric forms. Logarithmic differentiation. Maxima & Minima, Rate measure & Error. Equation of tangent and normal. Integration as the inverse process of differentiation. Integration by parts, by substitution and by partial fractions. Integration of rational and irrational functions. Definite integral and its application for the determination of area (simple cases). Trapezoidal & Simpson's Rule for numerical integration.

CHEMISTRY

Marks: 25 (25 Questions)

ATOMS, MOLECULES AND CHEMICAL ARTHMATIC: Symbols, formulae, oxidation, reduction, oxidation number, balancing of simple chemical equations, mole concept, empirical formulae and molecular formulae.

CHEMICAL FAMILIES- PERIODIC PROPERTIES: Mendeleev's and Modern periodic tables, classification of elements into s, p, d and f blocks, periodic properties (ionisation potential, electron affinity, atomic and ionic radii, oxidation states).

ATOMIC STRUCTURE, BONDING AND MOECULAR STRUCTURE: Bohr's theory, brief description of hydrogen spectrum, the wave nature of matter, de-Broglie's theory, Uncertainty principle, Quantum numbers, Pauli's exclusion principle, Hund's rule of maximum multiplicity, shapes of orbitals, electronic configuration of atoms upto atomic no. 30. Types of bonding (ionic, covalent and co-ordinate covalent), Lewis structure, VSEPR theory, orbital overlap and molecular shapes, hybridisation (sp, sp² and sp³) and molecular structure, hydrogen bond, mettalic bond, Vanderwaals forces.

PHYSICS

Marks: 25 (25 Questions)

DESCRIPTION OF MOTION: Motion in a straight line, uniform motion, speed and velocity, equation of motion in a straight line, position time graph, instantaneous velocity and acceleration, motion in two dimensions,projectile motion, uniform circular motion, torque, angular momentum, conservation of angular momentum,centripetal and centrifugal forces, centre for mass, motion of centre of mass and momentum conservation.

MOMENT OF INERTIA: Moment of Inertia (M.I.) of rigid body, radius of gyration, theorem of parallel and perpendicular axes, M.I. of a straight rod, circular ring, circular disc, relation between torque and M.I., kinetic energy, motion of point mass tied to the string wound on a cylinder, motion of cylinder rolling without slipping on an inclined plane.

KINETIC THEORY OF GASSES: Boyle's and Charles's laws, gas equation, gas constant, pressure exerted by gas, kinetic energy of molecules, kinetic interpretation of temperature, derivation of gas laws from kinetic theory of gases.

ELECTROMAGNETIC WAVES, ATOMIC AND NUCLEAR PHYSICS: Production and properties of e.m. waves, spectrums, nature and velocity of e.m. waves, propagation of radio waves in earth's atmosphere, photoelectric effect, laws of photoelectric effect, production of x-rays, soft and hard x-rays, uses of x-rays, Radio activity laws, half life and average life for radioactive materials, nuclear fission and fusions.

Objective Type Questions

Fill the choice of the alternative you think to be correct answer in the OMR answer sheet.

Q1. A ball thrown up is caught by the thrower 4s after start. The height to which the ball has risen is

(assuming $g = 10 \text{ m/s}^2$)

- (a) 20 m (b) 10m (c) 400m (d) 2m

Q2. What determines the nature of path followed by the particle?

- (a) speed (b) velocity (c) acceleration (d) none of these

Paper – II

BASICS OF ENGINEERING

Marks : 100 (100 Questions)

Time : 2 hours

COMPUTER SCIENCE AND ENGINEERING/INFORMATION TECHNOLOGY

Operating Systems, introduction to various operating systems, single user, multi user, batch processing, time sharing, real time and multi processing and distributed computing, graphical user interface, memory management. Introduction to computer, components of computer, compilers, assemblers, loaders, linkers. Introduction to internet, networking, information technology. Introduction to databases, architecture & structure of DBMS, Data Models, Data organization. Algorithms, flowcharts, decision trees, introduction to C programming, Object oriented concepts.

ELECTRONICS AND COMMUNICATION ENGINEERING

Conductors, semiconductors, insulators, Extrinsic & Intrinsic semiconductors. PN Junction Diode - its VI characteristics Rectifiers, fitters. BJT - various transistor configurations their input/output characteristics. FET, MOSFET their construction & characteristics. Modulation - Need & types of modulation (AM, FM, PM). Radio Receivers - TRF & superheterodyne. Pulse modulation PAM, PWM, PPM. Logic gates - Definition, symbols & truth table of NOR, OR, AND, NAND, EX-OR gates, various Flip Flops (SR, JK, T, D), Registers & counters. Operational Amplifier - Inverting & Non inverting amplifiers, Op Amp as an inverter, scale changer, adder, subtractor, differentiator, integrator.

ELECTRICAL AND INSTRUMENTATION ENGINEERING

AC fundamentals: single phase, three phase, rms value, peak to peak value, average value, power and power factor. **DC & AC Bridges:** Maxwell's Bridge, De-Sauty's Bridge, Owen's Bridge, Wheatstone, Kelvin's Double Bridge, Hay's Bridge. **Network Theorems:** Thevenin's theorem, superposition Theorem, Norton Theorem, maximum power theorem, reciprocity theorem, Tellegen's theorem. **Electromagnetic circuits:** Magnetic circuits, Electromagnetic circuits, Principle of AC & DC machines and Transformers. **RCL circuits, DC Circuits:** Circuit components (resistor, inductor and capacitors) and DC Circuits Resonance, Error in measurement systems, Galvanometers, ammeters and voltmeters, DC potentiometers, Multimeter, LED/LCD/Segment Displays, CRO, Fundamentals of linear control system, Sensors and transducers, variable resistive, capacitive and inductive transducers, Basic components of instrumentation system, principles of analog signal conditioning, A/D and D/A converters, filtering and impedance matching, operational amplifiers.

MECHANICAL ENGINEERING

Thermal Engineering: Basic concepts, thermodynamic properties: intrinsic and extrinsic, open, closed and isolated systems, heat and work, specific heat, thermal and thermodynamic equilibrium, Zeroth law and first law of thermodynamics, internal energy, entropy, enthalpy. Clausius and Kelvin-Planck statement of second law, different thermodynamic processes like isobaric, isochoric, isothermal. Elements of heat transfer, conduction, convection, radiation.

Applied Mechanics, Strength of Material and Machine Design: Concept of mechanics and applied mechanics, laws of forces, moments, friction and laws of motion. Stress & strain, concept of load, tensile, compressive and shear stress and strains, stress concentration, types of loading, theories of failure, factor of safety, endurance limit, efficiency of riveted and welded joints, keys and its types, stress in shafts, design of shafts (solid and hollow).

Fluid Mechanics: Concept of fluid, fluid mechanics and hydraulics, properties of fluid (viscosity, specific weight, specific volume, specific gravity) with their units. Pascal's law, concept of atmospheric pressure, gauge pressure, absolute pressure, vacuum and differential pressure.

Manufacturing Engineering & Management: Introduction and classification of engineering materials, thermal, chemical, electrical and mechanical properties of commonly used engineering materials. Purpose of heat treatment, hardening, case hardening, annealing, normalizing, tempering, heat treatment processes and their applications. Arc and gas welding processes, patterns, cores, basic foundry processes and powder metallurgy. Different machining operations, principles of operations, cutting tools and machine tools used to carry out turning, milling, drilling, shaping & planing operations.

Quality control, control charts, acceptance sampling, TQM. Plant location, layout and line balancing. Types of plant layouts. Inventory control, Inventory classification, and EOQ and ABC analysis.

CHEMICAL ENGINEERING

Chemical Engineering Thermodynamics: Laws of thermodynamics, thermodynamic properties. general thermodynamic relations. Application for open/closed systems and reversible/irreversible processes. Chemical equilibrium.

Chemical Reaction Engineering: Molecularity and order of reaction, reactor kinetics, different types of ideal reactors and their performance.

Heat and Mass Transfer: Different modes with governing relationships. Equipments and industrial applications.

Industrial Stoichiometry: Units and dimensions. Steady state material balance and energy balance.

Unit operations: Sedimentation, size reduction filtration, mixing and agitation.

Fluid flow: Fluid properties and their relationships to flow. Different types of pumps.

Chemical Process Industries: Raw materials for the manufacturing of ammonia, urea, ammonium phosphate, cement, soda ash, caustic soda, glass, sulphuric acid, hydrochloric acid and nitric acid.

Degree of polymerization, types of polymerization, classification of rubbers, vulcanization of rubber, classification and composition of crude petroleum, raw material and various additives for paper industry. Raw material for the manufacturing and chemical composition of oils and fats.

Process Instrumentations: Instruments for temperature, pressure, flow and liquid level measurement.

Environmental Engineering and Safety: Different types of liquid, air and solid pollutions from industries, effect of chemical pollution on ecology and environment. Pollution control methods. Hazards from wastes, toxic gases, chemicals; symptoms and their remedial action. Fire, noise pollution in industry and their control.

FOODTECHNOLOGY

Different methods of heat transfer, Fourier's law, Steady state heat transfer through plain and composite slab, Cylindrical and spherical surfaces, Natural and forced convection, LMTD and effectiveness of parallel and counter flow heat exchanger, Radiation heat transfer, Fick's law of diffusion and basic concepts of convective mass transfer, Moisture content on dry and wet basis, Equilibrium moisture content, Constant and falling rate phase calculations, Critical moisture content, Concept of psychrometry and its use, Refrigeration cycles, Load calculations, Physical properties of fluid, Classification of fluid flow, Continuity equation, Bernoulli's theorem and its application, Concept of Reynold's number and its determination, Navier-Stokes equation, Flow through parallel plates and circular pipes, Study and performance of different type of pumps like centrifugal, reciprocating, rotary and piston displacement pumps, valves and joints, Concept of viscosity, Newtonian and non-Newtonian fluids, Calculation of energy required in grinding by Rittinger's law and Bond's law, Crushing efficiency, Mixing index, Rate of mixing, Constant rate filtration, constant pressure filtration, Filter cake compressibility, Ultrafiltration and reverse osmosis, Basic Separation equation, Rate of separation, liquid-Liquid separation, Centrifuge equipment like cream separator, Bactofuge and clarifiers used in dairy industry, crystallization, Separation based on size, Effectiveness of screens, Fineness modules of sample, Raoult's Law, Relative volatility, Azeotropic and extractive distillation, Simple (differential) distillation, Rectification (Fractionating column) distillation. Thermal processing, general methods for calculation of process time.

CHAPTER -VII

Syllabus OF SLIET ENTRANCE TEST SET-VI For admission to M.Tech & MBA Programme-2009

Pattern of SET-VI

1. There will be one paper consisting of 100 objective type questions of two hours duration and of 100 marks.

Note : *In this paper candidate is required to attempt all the questions. Answers of the objective type questions are to be filled in the OMR answer sheet given separately. There will not be any negative marking.*

Syllabus

MANUFACTURING SYSTEMS ENGINEERING / MECHANICAL ENGG. (WELDING AND FABRICATION)

Marks:100
(100 Questions)

Time : 2 Hours

Engineering Mathematics: Laplace Transformation & Fourier Series, Partial differential equations, vector calculus, curve fitting, Regression analysis & linear correlation.

TOM & SOM: Simple Mechanisms, Velocity & Acceleration in Mechanisms, Cams, Balancing & Vibrations, Stress and Strains, Bending & Deflection of Beams, Pressures vessel, Rotating Rings.

Fluid Mechanics & Machines: Introduction, static pressure, Gauges, flow of liquids through orifices & pipes, working principles of hydraulic machines & pumps.

Material Science: Bonding in solids & crystals, structure of Material Imperfection in solids, Heat Treatment, Magnetic materials, Dielectric and other materials.

Thermal Science: Basics I.C. Engines, Steam Nozzles, Steam Turbines, Compressors & Gas Turbines, different modes of Heat Transfer.

Operation Research:- Linear Programming, Network Models, Queuing Theory, PERT, CPM

Metal Cutting & Forming: Tool Nomenclature, Orthogonal & oblique cutting, Chip formation and types of Chips, force system in turning, milling, tool wear, tool life and machinability. Fundamentals of dynamometry, temperature measurement in machining, Types & application of different cutting fluids, plasticity, theories of failure, rolling, forging, extrusion and drawing processes.

Measurement & Quality Control: Standards of measurements, measurement of displacement, speed, stress strain, force, torque, spur gears etc. introduction of quality control, control charts, OC curve, acceptance sampling, TQM, reliability.

Work Study & Ergonomic: Productivity, Methods Study, Time Study, work sampling, Ergonomics. **Manufacturing Processes:** Metal Casting & Fabrication; Types of Molding Sand, Solidification of Metals Design of Risers, Various Molding & Casting processes. Arc Welding Process, TIG, MIG, CO₂, Plasma, Resistance Welding, Welding defects, Powder Metallurgy.

Non-Conventional Machining Processes: EDM, ECM, CHM, USM, AJM, WJM, EBM, IBM, LBM and PAM.

Industrial Automation: Introduction, Pneumatics, Pneumatic Actuators & Valves, Basic Pneumatic circuits, fluidics & fluid logic, Pneumatic sensors, programmable logic controllers, encoders.

CAD/CAM: Fundamentals of CAD, NC Machine tools, Group Technology, Components of CIM, Computer Aided part Programming, Adaptive Control System.

FOOD ENGINEERING & TECHNOLOGY

Marks:100
(100 Questions)

Time : 2 Hours

Technology of Fruit and Vegetable Processing: Extraction and preservation of fruit juices, jam, jelly and marmalades, Intermediate moisture products, Canning of fruits and vegetables, Drying and Dehydration of fruits & vegetables, Freezing, Chutney, Pickles and tomato products, Utilization of byproducts.

Dairy Engineering: Cleaning and sanitation in dairy industries, Homogenization, Pasteurization, Sterilization, Evaporation and Drying of milk, Utilization of byproducts.

Food Chemistry: Physico-chemical characteristics of food constituents, Changes in food constituents during processing and their determination methods, Enzymes and their applications in food processing.

Heat and Mass Transfer in Food Processing: Modes of heat transfer-Principles and practices in food engineering, Heat exchangers and their application in food processing, Mass transfer-Fick's law of diffusion of mass transfer, natural and forced convective mass transfer.

Food Packaging and Storage Engineering: Properties of packaging materials, Packaging equipment and machinery, Food packaging systems, Packaging standards and Role of packing in environmental pollution, Storage requirements and structures, Handling equipments, Management Practices.

Biotechnology: Principles of biochemistry, Microbial products, Techniques of genetic engineering, Enzyme technology, Tissue culture technology, Environmental biotechnology.

Animal Products Technology: Meat processing and preservation, Sausage, Meat Plant sanitation and safety, Fish processing and preservation, Fish products, Utilization of by-products.

Food Biochemistry: Cell biochemistry, Metabolism of carbohydrates, lipids and proteins. Food Analysis and Quality Control; Quality attributes and measurements, Consistency and viscosity, Modern techniques of food analysis, Measurements of various properties, sensory quality and analysis, Food laws and regulations.

Technology of Cereals and Pulses: Structure and composition, Wheat milling technology, Rice Milling, Milling of pulses, Cereal based extruded products, Utilization of by-products.

Industrial Microbiology :Techniques of strain development, Microbial growth, Food spoilage, Microbial products.

Biochemical Engineering: Media sterilization, Air Sterilization, Enzyme Kinetics, Bioreactor fermenter, Aeration and Agitation.

Food Processing Plant Layout and Design: Network analysis of processes, Evaluation of layouts, Plant Buildings, Cost analysis, Plant layout of different industries.

Beverage Technology: Non-alcoholic beverages, Alcoholic beverages, Instrumentation and process control in beverage industry.

Food Engineering: Material and energy balance, Flow of fluids, Thermal processing, Freezing, Fluidization, Refrigeration and air conditioning, Leaching & Extraction.

INSTRUMENTATION AND CONTROL ENGINEERING

Marks:100
(100 Questions)

Time : 2 Hours

Electrical technology and Networks: Introduction to electrical systems DC and AC circuits, basic electrical components, electromagnetism alternating quantities, AC power, single phase series and parallel circuits, resonance circuit, Matrices with graphs, Nodal and mesh analysis. Network theorems; superposition, Thevenin, Norton, reciprocity, Millman's, substitution, compensation, Tellegen's, wye-delta transformation, steady state sinusoidal analysis using phasors, Fourier series, linear constant coefficient differential and difference equations; time domain analysis and frequency domain analysis of RLC series and parallel circuits, convolution, 2-port network parameters, driving point and transfer functions, state equation for networks, attenuators (lattice, T-type, p-type, L-type, ladder type, balanced), conventional filters, passive network synthesis (positive real functions, LC network, synthesis of dissipative network, two terminal R-L and R-C network).

Electronics Principles:Characteristics and equivalent circuits (large and small signal) of diodes (pn junction, zener, schottky, varactor), BJT, JFETs, thyristor, UJT, and MOSFET; clipping, clamping, rectifier; biasing and bias stability of transistor and FET amplifiers. Amplifiers: single and multi-stage (coupling), differential, operational, feedback and power. Analysis of amplifiers; frequency response of amplifiers. Simple op-amp circuits. Filters. Sinusoidal oscillators; criterion for oscillation. Function generators and wave-shaping circuits, Power supplies.

Digital electronics and Microprocessors :Number systems and arithmetic (binary, Gray , BCD , XS-3, hamming, ASCII, EBCDIC codes) Boolean algebra; minimization of Boolean functions; logic gates; digital IC families. Combinational and

sequential circuits. Sample and hold circuits, ADCs and DACs. Semiconductor memories. ALU design, Microprocessor (8085): architecture, programming, memory and I/O interfacing (8155, 8255, 8253, 8251, 8257, 8279, 8259)

Control Theory :Basic control system components; block diagrammatic description, signal flow graphs, reduction of block diagrams, input test signals, properties of systems: linearity, time-invariance, stability and causality. Open loop and closed loop (feedback) systems. Properties of linear time- invariance (LTI) systems. Transient and steady state analysis of LTI system and frequency response. LTI control system analysis: Root loci, Routh Hurwitz criterion, Bode and Nyquist plots; elements of lead and lag compensations, elements of PID control. State space representation of systems, block diagram for state equations, transfer function decomposition: direct, cascade and parallel, solution of state equation: Laplace method, Cayley-Hamilton method, Diagonalization method and Sylvester's method.

Transducers and Instrumentation:Bridges and potentiometers, PMMC moving iron, dynamometer and induction type instruments; measurement of voltage, current, power, energy and power factor; instrument transformers; digital voltmeters and multimeters; phase, time and frequency measurement; Q-meter, oscilloscopes, potentiometric recorders, error analysis. Transducers - elastic, resistive, inductive, capacitive, thermo-electric, piezoelectric, photoelectric, electro-mechanical, electro-chemical, and ultrasonic. Measurement of displacement, velocity, acceleration, shock, vibration, force, torque, power, strain, stress, pressure, flow, temperature, humidity, viscosity, and density. Energy storing elements, suspension systems, and dampers.

Programming Concepts

Algorithms, Programming in C and C++: data types, console / file input and output, arrays, structures, pointers, functions, command line arguments, passing of parameters from one function to other, Concept of OOP.

POLYMER

Marks:100

Time : 2 Hours

(100 Questions)

CHEMISTRY: Physical chemistry: Properties of gases, heat & thermodynamics, chemical equilibrium, chemical kinetics. Organic chemistry: classification & nomenclature of organic compound, functional groups & derivatives, stereochemistry.

POLYMER TECHNOLOGY: Concept and classifications of polymers, average molecular weight and concept of M_n , M_w , M_v , M_z . Functionality principle, addition polymerization; free radical, Ionic, coordination, condensation polymerization and co-polymerization, methods of polymerization techniques – bulk, solution, emulsion and suspension. Structure property relationship and applications of following polymers, PE, PP, PS, PVC, ABS, PMMA, PC, PTFE, Nylon, Polyester, PF, UF, MF, polyurethane, Epoxy, plastics, Natural rubber, SBR, Nitrile rubber, silicon, Butyl, Polyisobutylene, EPDM rubbers. Newtonian and non-Newtonian fluids- Maxwell and Voigt model, creep and stress relaxation properties, capillary and rotational rheometer, basic understanding of polymer processing Techniques such as extrusion, injection, blow, rotational, calendaring, thermoforming, compression moulding, types of spinning techniques for fibres. Mechanical properties such as Tensile, compressive, impact, shear fatigue test, thermal properties such as: heat deflection temperature, vicat softening temperature, brittleness temperature; electrical properties: dielectric strength, dissipation factor, insulation resistance, arc resistance; Chemical properties such as stress resistance and environmental stress cracking resistance. Thermal analysis of polymers, DSC, TGA, TMA, Concept of degradation. Application of specific polymers like biodegradation and conducting polymers in various fields like packaging, automobiles, insulation, agriculture, biomedical etc.

CHEMICAL ENGINEERING: Review of types of flow and fluids, Stoke's law, concept of boundary layers. Flow measurement by orifice, ventury, pitot tube and rotameter, screening: types of screen, capacity and effectiveness of screen; principle of size reduction: Compression, impact, rubbing, cutting. Fourier law in one dimension, heat conduction through composite having plane wall, spherical and cylindrical geometry. Forced and free convection, concept of thermal boundary layer, overall heat transfer coefficient, distribution of radiant energy, emmissivity, absorptivity, reflectivity, transmittivity, Plank's Law, Kirchoff's law, Stefan Boltzman Law, drop wise and film wise condensation, concept of heat exchanger and evaporation. Relative volatility, Rault's law, Reflux ratio, Fick's Law of diffusion, Multistage tray towers in distillation, method of McCabe & G-L operations i.e. packed towers, spray towers, tray towers etc. differential distillation, flash evaporation, Azeotropic and extracted distillation, types and nature of adsorption. Effect of temperature and pressure, Freundlich and Langmuir isotherm, drying: Batch and continuous, types of dryers, basic concepts of extraction, leaching, gas absorption. Importance of instrument in chemical industries and their classifications, pressure measurement by manometers, gages and pressure

transducers, Temperature measurement: Expansion thermometer, Resistance thermometer, Thermocouple, and pyrometers, measurement of viscosity, conductivity, humidity and PH.

ELECTRONICS & COMMUNICATION ENGINEERING

Marks:100
(100 Questions)

Time : 2 Hours

Networks: A.C. and D.C. fundamentals, nodal and mesh analysis. Network theorems: superposition, Thevenin and Norton's maximum power transfer, Wye-Delta transformation. Steady state sinusoidal analysis using phasors. Linear constant coefficient differential equations; time domain analysis of simple RLC circuits, Solution of network equations using Laplace transform: frequency domain analysis of RLC circuits. 2-port network parameters: driving point and transfer functions. State equations for networks.

Electronic Devices: Semiconductor physics, diffusion current, drift current, mobility, and resistivity. Generation and recombination of carriers. p-n junction diode, Zener diode, tunnel diode, BJT, JFET, MOS capacitor, MOSFET, LED, p-i-n and avalanche photo diode, Basics of LASERS. Device technology: integrated circuits fabrication process, oxidation, diffusion, ion implantation, photolithography.

Analog Circuits: Small Signal Equivalent circuits of diodes, BJTs, MOSFETs and analog CMOS. Simple diode circuits, clipping, clamping, rectifier. Biasing and bias stability of transistor and FET amplifiers. Amplifiers: single and multi-stage, differential and operational, feedback, and power. Frequency response of amplifiers. Simple op-amp circuits. Filters. Sinusoidal oscillators; criterion for oscillation; single-transistor and op-amp configurations. Function generators and wave-shaping circuits, 555 Timers. Power supplies.

Digital Circuits: Boolean algebra, minimization of Boolean functions; logic gates; digital IC families (DTL, TTL, ECL, MOS CMOS). Combinatorial circuits: arithmetic circuits, code converters, multiplexers, decoders, PROMs and PLAs. Sequential circuits: latches and flip-flops, counters and shift-registers. Sample and hold circuits, ADCs, DACs. Semiconductor memories. Microprocessor (8085): architecture, programming, memory and I/O interfacing.

Signals and Systems: Definitions and properties of Laplace transform, continuous-time and discrete-time Fourier series, continuous-time and discrete-time Fourier Transform, DFT and FFT, z-transform. Sampling theorem. Linear Time-Invariant (LTI) Systems: definitions and properties; causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structure, frequency response, group delay, phase delay. Signal transmission through LTI systems.

Control Systems: Basic control system components; block diagrammatic description, reduction of block diagrams. Open loop and closed loop (feedback) systems and stability analysis of these systems. Signal flow graphs and their use in determining transfer functions of systems; transient and steady state analysis of LTI control systems and frequency response. Tools and techniques for LTI control system analysis: root loci, Routh-Hurwitz criterion, Bode and Nyquist plots. Control system compensators: elements of lead and lag compensation, elements of Proportional-Integral-Derivative (PID) control. State variable representation and solution of state equation of LTI control systems.

Communications: Random signals and noise: probability, random variables, probability density function, Auto-correlation, power spectral density. Analog communication systems: amplitude and angle modulation and demodulation systems, spectral analysis of these operations, super heterodyne receivers; elements of hardware, realizations of analog communication systems; signal-to-noise ratio (SNR) calculations for amplitude modulation (AM) and frequency modulation (FM) for low noise conditions. Fundamentals of information theory and channel capacity theorem. Digital communication systems: pulse code modulation (PCM), differential pulse code modulation (DPCM), digital modulation schemes: amplitude, phase and frequency shift keying schemes (ASK, PSK, FSK), matched filter receivers, bandwidth consideration and probability of error calculations for these schemes. Basics of TDMA, FDMA and CDMA and GSM.

Electromagnetics: Elements of vector calculus: divergence and curl; Gauss' and Stokes' theorems, Maxwell's equations: differential and integral forms. Wave equation, Poynting vector. Plane waves: propagation through various media; reflection and refraction; phase and group velocity; skin depth. Transmission lines: characteristics impedance; impedance transformation; Smith chart; impedance matching; S parameters, pulse excitation. Waveguides: modes in rectangular waveguides; boundary conditions; cut-off frequencies; dispersion relations. Basics of propagation in dielectric waveguide and optical fibers. Basics of Antennas: Dipole antennas; radiation pattern; antenna gain.

MBA

Marks:100

Time : 2 Hours

1. There will be one paper consisting of 100 objective type questions of two hours duration of 100 marks.
2. Group Discussion (GD) (25 Marks)
3. Interview (25 Marks)

Note : *In this paper candidate is required to attempt all the questions. Answers of the objective type questions are to be filled in the OMR answer sheet given separately. There will not be any negative marking.*

Syllabus :

The paper will include questions covering the following topics:-

- | | |
|--|-----------------------------|
| a) Language and Communication Skills | (25 Multi Choice Questions) |
| b) Arithmetic and Quantitative Skills | (25 Multi Choice Questions) |
| c) Critical Reasoning & General Intelligence | (25 Multi Choice Questions) |
| d) General Awareness | (25 Multi Choice Questions) |

Group Discussion (GD) [25 Marks]:

The Group Discussion is primarily aimed at assessing the oral communication skills, convincing power and other managerial capability of candidate. The GD will fetch 25 marks and time allowed for one GD will be 30 minutes. A group of 10 students on random basis would be selected to participate in each GD out of the candidates qualifying the Written Objective Type Test. The topics given for the GD would be from current affairs, economics and management. The Panel of Judges would be consisting of Three Judges having Senior Faculty members and one person from industry.

Interview [25 Marks]:

The final stage of the selection process will be an Interview for the candidates going through earlier two stages. The interview will be conducted by a panel of three interviewers again consisting of three members including eminent faculty members and industrialists.

Note: *Result for admission to M.B.A. Programme will be prepared on the basis of marks obtained in all the above three components i.e. written test (SET-VI for M.B.A.), group discussion and interview.*

Appendix-I

INSTRUCTIONS FOR FILLING-UP AND TO DESPATCH THE O.M.R. APPLICATION FORM

Please read carefully the INSTRUCTIONS given below before filling the O.M.R. Application Form

Candidates should first write the relevant information in the boxes () in black ink, in block letters. While writing name, leave one box blank between the first name and middle name, and between the middle name and surname. However, the corresponding circle (○) are to be darkened completely using HB Pencil only, as the machine picks up only dark pencil marks. Do not use ink pen or ball pen to darken the circles.

In case of any discrepancy in circle and the corresponding text, the circle marking will be taken as final.

Do not fold, staple, pin, wrinkle or scribble anything on the O.M.R. Application Form. Do not paste any piece of paper anywhere on top portion of the O.M.R. form.

Options once filled by the candidate in the form cannot be changed at a later stage.

Photograph, signature etc. will be scanned by a machine which reads only black images and from the specified areas of the form only. Your photograph must be of good quality (black and white) and pasted inside the box in block 10. Ensure that you have given the mailing address and have signed in the block number 11 and 12 respectively, in black ink.

1. Name of the Candidate:

Write your name in full as entered in High School or equivalent Certificate in the boxes and darken the corresponding circles, as per example given below:
ASHMEET KAUR

2. **Father's Name:** Write the name of your father in the boxes and darken the corresponding circles.
3. **Nationality:** Fill-up appropriate circle for your nationality in the given space.
4. **Sex:** Fill-up Male/Female circle as the case may be.
5. **Category Code:** Fill up the category code in the box provided. (Abbreviations : Gen = General; SC = Schedule Caste; ST = Schedule Tribe; OBC = other back ward classes; NRI = Non resident Indian; PH = Physically Handicapped; PWD = Person with disability) A Candidate belonging to SC category will fill-up as shown below:

5. CATEGORY CODE	
(Any one from 1 to 5)	
Gen	<input type="radio"/>
SC	<input checked="" type="radio"/>
ST	<input type="radio"/>
OBC	<input type="radio"/>
PH	<input type="radio"/>
NRI	<input type="radio"/>
PWD	<input type="radio"/>

Please note that the benefit of only one category will be given, if applicable.

6. **Admission Sought For:** Fill-up-appropriate circle for the course you are applying for.
7. **Educational Qualification:** Fill-up the appropriate circle for your qualification in the given space. (Note that matric pass are eligible for Certificate, 10+2 pass are eligible for Diploma, Diploma Pass are eligible for Degree and Degree pass are eligible for M.Tech./ MBA programme (However, detailed eligibility criteria for each programme is given in Chapter-II).

8. **State of Passing Qualifying examination:** Fill-up the State from where you have passed the qualifying exam (refer 2.4 (b) in Chapter-II).

The candidate is entirely responsible to prove his/her eligibility for claiming reservation under any of the reserved categories.

9. **Choice of PG Courses:** The students appearing in SET VI must fill the choice of P.G. course. The abbreviations for various P.G. courses are:

- CH = Polymer Technology
- EC = Electronics & Communication Engineering
- FT = Food Engineering & Technology
- IN = Instrumentation & Control Engineering
- ME = Manufacturing System Engineering
- WT = Mechanical Engg. (Welding & Fabrication)
- MBA = Master of Business Administration

10. **Photograph:** Paste (do not staple) a recent 4.0 cm x 4.5 cm, good quality (black and white) photograph. Note that the photograph must not be larger than the space (box) provided for pasting it. The candidates are advised to have some spare copies of this photograph with them.
DO NOT GET THE PHOTOGRAPH ATTESTED.

11. **Complete Mailing Address:** Write your complete mailing address including your NAME and PIN CODE inside the box only **IN CAPITAL LETTERS**. This address will be used for despatch of Admit Card, counselling letters, etc. Please note that this block will be copied photographically and, therefore, it should be written very clearly in black ink only. In case any mistake is occurred in the mailing address then paste an exact size white paper slip and write your address on that.

12. **Signature of the Candidate:** Please put your signature in black ink in the box provided for the purpose.

13. **Mother's Name:** Write the name of your mother in the boxes and darken the corresponding circles.

14. **SET IV/V (SLIET Students only):** Only the students appearing in SET-IV/V are to fill the appropriate circle to indicate their trade and registration number in their Certificate/Diploma course.

15. **Are you GATE Qualified (applicable for PG programme only):** If you are GATE qualified darken the corresponding circles and give your GATE score in the boxes provided.

16. **Date of Birth:** Enter the date, month and year of your birth as per English calendar as recorded in High School or equivalent certificate in the boxes and darken the

D	D	M	M	Y	Y	Y	Y
2	4	0	5	1	9	8	1
○	○	●	○	○	○	○	○
①	①	①	①	●	①	①	●
●	②		②	②	②	②	②
③	③		③	③	③	③	③
	●		④	④	④	④	④
	⑤	●		⑤	⑤	⑤	⑤
	⑥		⑥	⑥	⑥	⑥	⑥
	⑦		⑦	⑦	⑦	⑦	⑦
	⑧		⑧	⑧	⑧	●	⑧
	⑨		⑨	⑨	●	⑨	⑨

corresponding circles. For example 24.05.1981 be entered as follows:

17. **Bank Draft Details:** Fill-up the Bank Draft date and number at the appropriate place in the boxes. The candidates belonging to SC/ST categories are to fill-up the circle for Rs.250/- whereas all other candidates are to fill-up the circle for Rs.500/- as DD Amount. There is no Examination fee for PWD candidates.

18. **Choice of Centres:** A list of centres of SET-2009 is given at **page 16** in Chapter-III. Fill-up the correct choices. Please note that in each case three choices must be filled in order of preference (give city code numbers only).

19. **Parmanent Address of the Candidate:** Write your complete personal address including your name and pincode inside the box in capital letters with black point ball pen in the application form.

PIN CODE

20. **Declaration:** The declaration is to be signed by the candidate and countersigned by parent/guardian. Unsigned forms will not be accepted.

21. **Telephone no. with STD code:** Write your telephone number with STD code in the boxes provided.

Despatch of Application Form: Candidate should write/fill the relevant entries in the space provided on the envelope marked for sending the APPLICATION FORM SET-2009. The application forms, must be sent in this envelope by registered post/speed post so as to reach the office of the Chairman, SET-2009 on or before the last date. Application forms sent by ordinary post will not be accepted.

One envelope should contain only one O.M.R. application form and demand draft.

Last Date for Receipt of Completed Application Form: The last date for the receipt of completed application form in the office of Chairman, SET-2009 is the **30th April, 2009**. Application Forms received after this date will not be accepted under any circumstances. Institute will not be responsible for any delay either on the part of the post office or for any other reason whatsoever. Completed Application Form in the envelope marked "APPLICATION FORM SET-2009" can also be submitted personally in the office of the Chairman, SET-2009 on any working day during working hours on or before **Thursday the 30th April, 2009**.

Note: *O.M.R. Application form number must be noted carefully for future reference and correspondence.*

Appendix-II

INSTRUCTIONS FOR FILLING-UP OMR ANSWER SHEET

OMR Sheet will be given in the examination hall for answering the objective type questions with multiple choice. Please carefully read the following instructions for filling up of this OMR Sheet at the time of entrance test.

Fill your Roll Number, Centre Code NO. and Paper No. in Part A. Also put your signature in the box provided for this purpose.

In Part B give answers of the objective type questions by darkening the suitable circle out of the four given against each question no.

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margin-top: 10px;"> </div> <p style="font-size: small; text-align: center;">(OMR Sheet will have space for answering 100. objective type questions)</p>	1	(A)	(B)	(C)	(D)	26	(A)	(B)	(C)	(D)	2	(A)	(B)	(C)	(D)	27	(A)	(B)	(C)	(D)	3	(A)	(B)	(C)	(D)	28	(A)	(B)	(C)	(D)	4	(A)	(B)	(C)	(D)	29	(A)	(B)	(C)	(D)	5	(A)	(B)	(C)	(D)	30	(A)	(B)	(C)	(D)	6	(A)	(B)	(C)	(D)	31	(A)	(B)	(C)	(D)	7	(A)	(B)	(C)	(D)	32	(A)	(B)	(C)	(D)	8	(A)	(B)	(C)	(D)	33	(A)	(B)	(C)	(D)	9	(A)	(B)	(C)	(D)	34	(A)	(B)	(C)	(D)	10	(A)	(B)	(C)	(D)	35	(A)	(B)	(C)	(D)	11	(A)	(B)	(C)	(D)	36	(A)	(B)	(C)	(D)	12	(A)	(B)	(C)	(D)	37	(A)	(B)	(C)	(D)	13	(A)	(B)	(C)	(D)	38	(A)	(B)	(C)	(D)	14	(A)	(B)	(C)	(D)	39	(A)	(B)	(C)	(D)	15	(A)	(B)	(C)	(D)	40	(A)	(B)	(C)	(D)	16	(A)	(B)	(C)	(D)	41	(A)	(B)	(C)	(D)	17	(A)	(B)	(C)	(D)	42	(A)	(B)	(C)	(D)	18	(A)	(B)	(C)	(D)	43	(A)	(B)	(C)	(D)	19	(A)	(B)	(C)	(D)	44	(A)	(B)	(C)	(D)	20	(A)	(B)	(C)	(D)	45	(A)	(B)	(C)	(D)	21	(A)	(B)	(C)	(D)	46	(A)	(B)	(C)	(D)	22	(A)	(B)	(C)	(D)	47	(A)	(B)	(C)	(D)	23	(A)	(B)	(C)	(D)	48	(A)	(B)	(C)	(D)	24	(A)	(B)	(C)	(D)	49	(A)	(B)	(C)	(D)	25	(A)	(B)	(C)	(D)	50	(A)	(B)	(C)	(D)
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Appendix-III

ADMISSIONS UNDER PERSONS WITH DISABILITY (PWD) SCHEME

Under Persons with Disabilities Scheme of the Government of India 25 seats are available in different two year regular Diploma (12 seats) and Certificate Programmes (13 seats) for persons having more than 40% disability. If the seats remain vacant in one programme the same will be filled from the other programme. Maximum number of seats in any particular branch of Certificate/Diploma Course shall be three. Details of branches/courses is available in this brochure. It is to clarify that no vertical promotion system is available to students in the Persons with Disabilities Scheme.

Incentives to students under the Scheme:

- No Tuition Fee
- No Hostel Fee
- Mess Bill Payment upto 1000/- PM
- Scholarship @250/- PM
- Books and Uniform Allowance @3000/- per annum

Essential qualifications:

For Diploma Programme:

The minimum qualification for admission to the Diploma programmes is 10+2 pass with Physics, Chemistry & Mathematics from recognized board/university or a Certificate from SLIET in any trade. The candidates who have studied Biotechnology or Computer Science or Biology instead of Chemistry at 10+2 level are also eligible.

For Certificate Programme:

The minimum qualification for admission to the Certificate programme is Matric pass (Pass in English, Mathematics and Science is compulsory) from a State Secondary Education Board/CBSE/ICSE/National Open School or equivalent.

Application/Admission Procedure

Step 1: Interested candidates may apply for issuance of brochure free of cost if they satisfy the above eligibility conditions.

Step 2: Brochure may be studied carefully and application form contained in the brochure should be filled accordingly.

Students desirous of getting admission under the PWD Scheme must mark the PWD column in the OMR Application Form. Choice of centre for exam may also be filled carefully.

Step 3: Duly filled in application form shall be submitted at the address given in this brochure by the due date. No fee is to be paid for the Entrance Examination.

Step 4: Details of SLIET Entrance Test 2009 and the prescribed syllabi are given in this brochure. Applicants shall prepare accordingly.

Step 5: Applicants shall be sent an Admit Card mentioning their roll number and centre.

Step 6: Applicants shall appear for the SLIET Entrance Test 2009 at the centre allotted to them. They are advised to reach the centre well in time.

Step 7: Result of the Entrance Examination shall be declared on the date mentioned in this brochure and the students shall reach for counseling on the prescribed date and time.

APPENDIX-IV

ADMISSION IN Ph.D. PROGRAMMES

The Institute offers facilities for work leading to the degree of Doctor of Philosophy (Ph.D.) in various departmental and interdisciplinary research areas:

1. Chemistry
2. Chemical Engineering
3. Computer Science and Engineering
4. Electrical and Instrumentation Engineering
5. Electronics and Communication Engineering
6. Food Engineering and Technology,
7. Humanities (English and Management)
8. Mathematics
9. Mechanical Engineering
10. Physics
11. Interdisciplinary Area

(i) Admission Calendar

- (a) The admissions to the Ph.D. programmes may be made in either or both of the two regular semesters.
- (b) Admissions to Ph.D. programmes are normally made in July-August for the first semester and in December-January for the second semester. The Dean of Research & Development will notify the admission calendar each semester.
- (c) In addition, the department may process applications for admissions to Ph.D. programmes on a continuous basis and admit students through out the year. The candidates admitted during the course of a semester, would be required to register for thesis with proportionate reduction in units.

(ii) Eligibility for Admission

The eligibility conditions given below are the absolute minimum. Departments may prescribe any requirements over and above these, subject to the approval of the Central Research Committee, CRC.

Master's Degree in Engineering/Technology/Science/Humanities/Management with 55% of marks (50% for SC/ST)

(iii) Admission Procedure

The applicants must apply for admission on prescribed forms, which must be sent directly to the Convener, DRC of the department concerned.

- (a) All admissions will be made on approval by the Chairman, Senate on the recommendations of the duly constituted selection committees and the Chairperson, CRC. A selection committee will consist of faculty members, one of whom will be from another department. The constitution of the selection committee will be proposed by the DRC and approved by the Chairperson, CRC.
- (b) Separate selection committees may be appointed to select candidates belonging to different categories, viz., sponsored, regular, QIP, etc.
- (c) Admission to the Ph.D. programmes will be based on written tests and/or interviews of the candidates short-listed by the DRC of the department concerned.

- (d) The admission of Scheduled Castes/Scheduled Tribes candidates will be decided without comparing them with the general category candidates.
- (e) The selected candidates, who have completed all the examinations including project/thesis examination and the viva voce before the date of registration but are unable to produce the certificate in proof of having passed and secured the minimum specified qualifying marks, may be considered for provisional admission. However, if admitted provisionally, they will be required to produce the evidence of their having passed the qualifying degree examination with minimum specified marks by the last date for document submission as specified in the academic calendar (usually about 8 weeks from the date of registration), failing which the admission may be cancelled.
- (f) The provisions in para 1.4h shall not be applicable in the case of M.Sc./M.Tech. students of the institute, who have been provisionally selected for admission to a Ph.D. programme. These students will be admitted to the Ph.D. programme subject to the condition that they must successfully complete all the prescribed requirements including acceptance of their thesis in a particular semester by the late registration date as specified in the academic calendar.
- (g) On approval by the Chairman, Senate, the departments will issue the admission letters to the candidates who will be required to accept the offer of admission by depositing the prescribed fee before the specified date.
- (h) In case a candidate does not accept the offer by paying the prescribed fee by the specified date, the offer of admission may stand withdrawn, and the admission offered to the candidates in the waiting list, if any, in order of merit.
- (i) The offer of admission may also stand withdrawn if the candidate who has accepted the offer fails to register by the date for late registration.
- (j) In case a student wishes to temporarily withdraw from his/her Ph.D. programme he/she may do so only after a period of two years following his/her date of registration with prior permission of the Senate.

Note: Extracts of the Rules and Regulations governing the Ph.D. programme may be obtained from the office of concerned HOD or Dean (R & D)