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<b>NOTE:</b>	<b>Syllabus of Entrance Test SET –IV and SET – V for admission to Diploma Programme – 2007 (vertical entry) and Degree Programme -2007 (vertical entry) will be available separately in SET Office, SLIET, Longowal and on the Institute website <a href="http://www.sliet.org">www.sliet.org</a></b>

**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-2007

### 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-2007)
3. Enclose the bank draft in the envelope for OMR Application Form without Stitching/Stapling.

### Important Dates:

Last date for receipt of complete Application Form      Friday, April 30, 2007  
Last date to despatch the Admit Cards                      Friday, May 11, 2007

### Date of Examination

- Certificate Programme (SET-I)                                      Saturday June 9, 2007
- Diploma Programme (SET-II)                                      Sunday June 10, 2007
- Degree Programme (SET-III)                                        Saturday June 9, 2007
- M.Tech./P.G. Programme (SET-VI)                                Saturday June 9, 2007
- Vertical Entry (Diploma & Degree)<sup>SET-IV and SET-V</sup>      Sunday June 24, 2007

**Declaration of Results**                                      Wednesday July 4, 2007

### \*Counselling for Admission:

1. Certificate Programme    Friday -Saturday, July 20-21, 2007
2. Diploma Programme    Monday, July 23, 2007
3. Degree Programme    Tuesday-Wednesday, July 24-25, 2007
4. P.G./M.Tech. Programme    Thursday, July 26, 2007

*\*Dates for Counselling are tentative/provisional*

### Commencement of Classes

Thursday, August 1, 2007

### 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-2007  
Tel. No.01672-280072, 284782, 284815, 284816  
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# 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 already been started in collaboration with Punjab Technical University, Jalandhar and other neighboring Universities. 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 is expected to get the status of a Deemed University in near future.

### 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 pursue 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) 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 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 and Diplomas. For Degree, M.Tech. and Ph.D. programme, presently, the Institute is affiliated to Punjab Technical University, Jalandhar (Punjab).

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 4.1.2007 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.

***All the Degree courses of the Institute are accredited by National Board of Accreditation (AICTE, 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 is coming up beautifully in a sprawling area of 451 acres with efforts to provide all modern facilities to the residents in the campus such as;

##### **(a) Hostels:**

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

##### **(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 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. Further expansion and planning is being undertaken to create infrastructure to make it a production unit.

##### **(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.org](http://www.sliet.org).

**(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. and N.C.C. units are also 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

S.K. Pandey, Ph.D.

### DEANS

Anand Vaz, Dean (Academics), Ph.D.

B.K. Kanungo, Dean (R&D), Ph.D.

M.B. Bera, Dean (P&D), Ph.D.

V.K. Jain, Dean (Welfare), Ph.D.

### DEPARTMENT OF CHEMICAL TECHNOLOGY

#### Professor:

Manohar Singh Saini, Ph.D. – On leave

#### Assistant Professors:

H. R. Ghatak, M.E.

Kamlesh Kumari, M.E.

P.P. Kundu, Ph.D. (H.O.D.)

#### Lecturers:

A.S.K. Sinha, B.E.

Avinash Thakur, M.E.

Gulshan Kumar Jawa, B.E. (On Study Leave)

Naveen Kumar Kaushley, B.E.

Subita Bhagat, B.E.

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

Ram Pal, Ph.D

Rita Goyal, 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.

Lakhwinder Kaur, M.E.

Manoj Kumar Sachan, M.E.

Savita Gupta, M.E.

Sukhwinder Singh, Ph.D.(H.O.D.)

#### Lecturers :

Damanpreet Singh, M.S.

Gurjinder Kaur, M.S.

Jaspal Singh, M.E.

Joydeep Chandra, M.Tech.

Manminder Singh, M.Tech.

Manoj Kumar, M.Tech.

Pardeep Singh, M.S.

### DEPARTMENT OF ELECTRICAL & INSTRUMENTATION ENGINEERING

#### Professors :

J.S.Dhillon , Ph.D

Sanjay Marwaha, Ph.D(H.O.D.)

V.K. Jain, Ph.D.

#### Assistant Professors :

Ajat Shatru Arora, Ph.D.

Amar Partap Singh, Ph.D. (E.O.L.)

Pratibha Tyagi, M.Tech.

#### Lecturers :

Amanpreet Singh, M.Tech. (with PTU)

Anshuka Bansal, M.Tech.

Ashwani Kumar, M.Tech.

Asim Ali Khan, M.Tech.

Charanjiv Gupta, B.E.

Diljinder Singh, M.E.

Gurmeet Singh, B.E.

Jaspal Singh Aujla, M.B.A., M.Tech.

Manmohan Singh, M.E.

Manpreet Kaur, M.Tech.

Manpreet Singh Manna, M.E.

Parveen Kumar Garg, M.E.

Raj Kumar Garg, M.Tech.

Rajinder Kaur, M.Tech.

Sanjeev Singh, M.Tech.

Surita Maini, M.E.

T.K. Vishnu Kumar, M.Tech.

### DEPARTMENT OF ELECTRONICS & COMMUNICATIONS ENGINEERING

#### Assistant Professors :

Jagpal Singh M.E.

Lakhvinder Singh, M.Tech. (H.O.D.)

P.C. Upadhaya, M.E.

#### Lecturers :

Ajay Pal Singh, M.E.

Manoj Kumar Garg, M.Tech.(On Study Leave)

Pankaj Kumar Das, B.Tech.

Ranjit Kaur, M.Tech. (On Lien)

### DEPARTMENT OF E. D.P. & HUMANITIES

#### Assistant Professors :

Jap Preet Kaur Bhangu, Ph.D

Mahesh Kumar, Ph.D.

Pardeep Kumar Jain, Ph.D. (H.O.D.)

Parveen Kaur Khanna, Ph.D

Pawan Kumar Dhiman, Ph.D

#### Lecturers :

Mandeep Ghai, M.B.A.

Sanjeev Bansal, M.B.A.

Sanjeev Kumar Garg, M.B.A.

### DEPARTMENT OF FOOD ENGINEERING & TECHNOLOGY

#### Professors :

M.B. Bera, Ph. D.

B.C. Sarkar, Ph.D. (H.O.D.)

#### Assistant Professors :

D.C. Saxena, Ph.D.

H.K. Sharma, Ph.D.

Kamlesh Prasad, Ph.D

P.S. Panesar, Ph.D.

#### Lecturers:

Bahadur Singh, Ph.D.

Charanjeet Singh Raina, M.Sc.

Charanjeet Singh, M.Sc.

Iqbal Singh, M.Sc.

Kanwaljit Singh, M.Sc.(On Leave)

Kuldeep Yadav, M.Tech.(On Leave)

Navdeep Jindal, M.Tech.

Pradyuman Kumar, Ph.D.  
Raj Rani , M.Tech.  
Sukhcharn Singh, M.Sc.  
Vikas Nanda, Ph.D.

#### **DEPARTMENT OF MATHEMATICS**

##### **Professor :**

S.S. Dhaliwal, Ph.D.

##### **Assistant Professors :**

Mandeep Singh, Ph.D.

Vinod Mishra, Ph.D. (H.O.D.)

##### **Lecturers :**

Janak Raj Sharma, Ph.D.

R.K. Goyal, M.Phil.

R.K. Guha, Ph.D.

Ravi Kant Mishra, Ph.D.

Sushma Gupta, Ph.D.

Vinay Kanwar, Ph.D. (on Leave)

V.K. Kukreja, Ph.D.

#### **DEPARTMENT OF MECHANICAL ENGINEERING**

##### **Professors :**

Anand Vaz, Ph.D. (H.O.D.)

V. Sahni, Ph.D. (On Deputation)

##### **Assistant Professors :**

Amrik Singh, M.E.

Anil Kumar Singla, M.E.

Dhanender Kumar, M.E. (Civil)

H.S. Bains, M.E.

Jatinder Madan, M.Tech.

K.P. Singh, M.Tech.

Kulwant Singh, M.E.

M.A. Akhtar, M.Tech.

Manoj Kumar, M.E.

P.K. Singh, Ph.D.

Pardeep Gupta, Ph.D.

R. Arulmani, M.E. (On Leave)

Rajesh Kumar, Ph.D.

S.C.Verma, M.E.

Vikas Rastogi, Ph.D.

##### **Lecturers :**

A.S. Shahi, M.Tech.

Arvind Jayant, M.Tech.

Harish Kumar Arya, M.Tech.

H.K. Kansal, M.E.

Indraj Singh, M.E.

Jagtar Singh, M.E.

J.S. Gill, M.Tech.

R.K. Saxena, M.Tech.

R.K. Yadav, M.Tech.

Rakesh Kumar, M.Tech.

Sunil Kumar, M.Tech.

Surinder Kumar, B.Tech.

#### **DEPARTMENT OF PHYSICS**

##### **Professors :**

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

N.P. Singh, Ph.D.

##### **Assistant Professors :**

Ashvani Kumar, Ph.D.

K.S. Mann, Ph.D.

Kiranjit Singh Kahlon, Ph.D.

M.M. Sinha, Ph.D.

S.N. Pandey, Ph.D. (On Lien)

S.S. Ghumman, Ph.D

S.S. Verma, Ph.D

Sanjeev Puri, Ph.D. (On Lien)

##### **Lecturers :**

P.B. Barman, Ph.D. (On Lien)

#### **TRAINING & PLACEMENT CELL**

##### **Head**

Pardeep Gupta, Ph.D.

#### **SCHEME FOR PERSONS WITH DISABILITY**

##### **Project Coordinator**

Mahesh Kumar, Ph.D.

#### **WORK SHOP**

##### **Head**

Anand Vaz, Ph.D.

##### **Astt. Workshop Superintendents**

Harbhajan Singh, Diploma (Mech.Engg.)

Hamender Kumar Aggarwal, B.E.

#### **CENTRAL LIBRARY**

##### **Librarians :**

Prithvi Singh, M.Lib.& Inf. Sc.

Sanjay Gupta, M.Lib.

#### **SPORTS DEPARTMENT**

S. S. Punia, SPI, M.P.Ed.

Sukhwinder Kaur, PI, B.A., B.P.Ed.

#### **ADMINISTRATIVE & ACCOUNTS STAFF**

##### **Deputy Registrars :**

R.K. Kaushik, B.A. (Hons.), PSAS

Rakesh Mishra, M.Com, LLB, DCA, PGDBA (On Lein)

##### **Assistant Registrar:**

Ram Kishan, B.Com., M.A.

#### **STORE PURCHASE OFFICE**

##### **Store Purchase Officer :**

C.S. Matharoo, DME

#### **HEALTH CENTRE**

##### **Medical Officer:**

Regina Bhandari, M.B.B.S. (On Lein)

#### **ESTATE OFFICE**

##### **Estate Officer :**

Sudeep Singh, M.E.

#### **COMMUNITY DEVELOPMENT CENTRE**

##### **Project Officer :**

Manoj Kumar, M.E.

## CHAPTER-II PROGRAMME STRUCTURE

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

- (a) Certificate
- (b) Diploma
- (c) Degree
- (d) M.Tech.
- (e) 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:

Disciplines	No. of students
Air Conditioning and Refrigeration <b>(CAC)</b>	30
Auto and Farm Machinery <b>(CAF)</b>	30
Computer Applications <b>(CCA)</b>	30
Foundry & Forging <b>(CFF)</b>	30
Food Technology <b>(CFT)</b>	30
Maintenance of Television <b>(CTV)</b>	30
Maintenance of Electrical Equipments <b>(CMEE)</b>	30
Paper and Printing Technology <b>(CPPT)</b>	30
Servicing and Maintenance of Electronics Equipments <b>(CSME)</b>	30
Servicing and Maintenance of Medical Instruments <b>(CSMM)</b>	30
Tool and Die Technology <b>(CTD)</b>	30
Welding Technology <b>(CWG)</b>	30

**(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) :** There will be vertical mobility of 50% of the students admitted (on the cut off date i.e.7.09.2005) 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 2005-2006 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 4<sup>th</sup> semester i.e. the last semester shall be given only one supplementary chance for the purpose of promotion to Diploma module.

**(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 2005-2006 in Certificate course are eligible to get admission against these seats. Even a SLIET student admitted in Certificate Course in 2005-2006 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**

Sr. No.	Discipline	Sanctioned Seats	Seats for Vertical Entry	Seats for Direct Entry
1.	Chemical Technology (DCT)	30	15	15
2.	Food Technology (DFP)	30	15	15
3.	Computer Science & Applications (DCA)	30	15	15
4.	Computer Science & Engineering (DCE)	30	20	10
5.	Electronics & Communication Engineering (DEC)	30	20	10
6.	Instrumentation & Process Control (DIN)	30	20	10
7.	Industrial & Production Engineering (DIP)	30	23	07
8.	Maintenance & Plant Engineering (DMP)	30	22	08
9.	Welding Technology (DWT)	30	15	15
10.	Foundry Technology (DFT)	30	15	15
	<b>Total</b>	<b>300</b>	<b>180</b>	<b>120</b>

*\*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.*

**TABLE-II : Linkage between various Certificate and Diploma Programme for the Academic Session 2007-2008**

CERTIFICATE PROGRAMME		DIPLOMA PROGRAMME
<b>1</b>		
Air Conditioning & Refrigeration Auto and Farm Machinery Tool and Die Technology	50% 50% 50%	Industrial and Production Engineering Maintenance & Plant Engineering
<b>2</b>		
Maintenance of T.V. Servicing & Maint.of Electronics Instruments Servicing & Maint.of Medical Instrumentats Maintenance of Electrical Equipments Computer Applications	50% 50% 50% 50% 50%	Computer Science & Engineering Electronics & Communication Engg. Instrumentation & Process Control Computer Science & Applications
<b>3</b>		
Foundry & Forging	50%	Foundry & Forging
<b>4</b>		
Welding Technology	50%	Welding Technology
<b>5</b>		
Food Technology	50%	Food Technology
<b>6</b>		
Paper & Printing Technology	50%	Chemical Technology

**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):** There will be vertical mobility of 50% of the students admitted (on the cut off date i.e. 7.09.2005) 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 2005-2006 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 4<sup>th</sup> semester i.e. the last semester, shall be given only one supplementary chance for the purpose of promotion to higher module.
- (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 2005-2006 in Diploma shall also be eligible for admission against direct entry seats. Even a SLIET student admitted in Diploma programme in 2005-2006 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**

Sr.No.	Discipline	Sanctioned Seats	Seats for Vertical Entry	Seats for Direct Entry
1.	Chemical Engineering with specialization in: (a) Polymer Technology (GCT Polymer) (b) Paper Technology (GCT Paper)	30 30	08 07	22 23
2.	Food Technology (GFT)	40	20	20
3.	Computer Science & Engineering (GCS)	60	30	30
4.	Electronics & Communication Engineering (GEC)	40	20	20
5.	Instrumentation & Control Engineering (GIN)	40	20	20
6.	Mechanical Engineering with specialization in: (a) Manufacturing Engineering (GME) (b) Welding Technology (GWT)	40 40	30 30	10 10
7.	Information Technology (GIT)	30	-	30
	TOTAL	350	165	185

**\*\*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 2007-2008**

DIPLOMA PROGRAMME		DEGREE PROGRAMME
<b>1</b>		
Computer Science & Applications Computer Science & Engineering	50% 50%	Computer Science & Engineering
<b>2</b>		
Foundry Technology Industrial & Production Engineering Maintenance & Plant Engineering Welding Technology	50% 50% 50% 50%	Mechanical Engg. with specialization in (i) Welding Technology (ii) Manufacturing Engineering
<b>3</b>		
Chemical Technology	50%	Chemical Technology with specialization in (i) Polymer Technology (ii) Paper Technology
<b>4</b>		
Food Technology	50%	Food Technology
<b>5</b>		
Electronics & Communication Engineering	50%	Electronics & Communication Engg.
<b>6</b>		
Instrumentation & Process Control	50%	Instrumentation & Control Engg.

**2.4 General principles applicable to all admissions i.e Certificate/Diploma/Degree/ Programmes**

- (a) If two/more candidates are having the same merit, then the candidate who is elder in age as per the relevant entry in matric certificate shall be placed at higher merit. If still there is a tie, then a candidate having higher marks in the qualifying examination shall be placed at higher merit.
- (b) RESERVATION OF SEATS :**
- (I) Reservation shall be followed only in direct entry seats as below:
- i) For Schedule Castes (SC) : 15%
  - ii) For Schedule Tribes (ST) : 7.5%
  - iii) For Physically Handicapped (PH): 03%
- (II) Apart from above, in case of Certificate and Diploma Programmes, seats for the candidates of Punjab state and Other states have been earmarked separately. The candidates passing qualifying examination from school/college situated in state of Punjab shall be treated as eligible for the quota meant for the candidates of Punjab state. All other candidates having passed qualifying examination from the schools or colleges situated outside Punjab shall be considered only under the quota meant for other states and U.T's. The territorial quota is as below :

**(i) Certificate Programme**

- (a) Quota for Punjab State (excluding Chandigarh) : 75%  
(b) Quota for Other States & U.T (Including Chandigarh) : 25%

**(ii) Diploma Programme**

- (a) Quota for Punjab State (excluding Chandigarh) : 50%  
(b) Quota for Other States & U.T (including Chandigarh) : 50%

**(iii) Degree Programme**

There shall be no reservation or quota etc. on territorial basis for admission to Degree programme. However, SC, ST & PH reservation is applicable.

**(III) Important notes regarding reservations.**

- (i) For the seats reserved for Physically Handicapped candidates, the minimum degree of disability is 40%. Seats reserved for Physically Handicapped (PH) in different branches are interchangeable between branches depending upon the availability/suitability of candidates & these changes will affect the number of general category seats accordingly. However in any branch (and also in total direct entry seats) number of seats will not be more than prescribed quota of 3% for this category. For this category student has to submit a certificate from **Chief Medical Officer of District concerned** with clearly mentioning about degree of disability. For admission to this category the rules of Government of India/Punjab Shall apply. However, decision of admission committee regarding suitability of candidate for a particular branch in this category shall be final, and binding on the candidate. The vacant seats in this category in any particular branch, due to non availability of suitable/eligible candidates, will be shifted to the general category in that branch only.
- (ii) The vacant seats under NRI/NRI sponsored category will not be shifted to any other category (including general category)
- (iii) For the purpose of deciding reservation of seats for SC/ST/PH category, two specializations in each of the two Degree Programmes namely Chemical Technology and Mechanical Engineering will be treated as one Degree programme.
- (iv) The territorial quota for candidates passing qualifying examination from National Open School or as private candidate shall be decided on the basis of their domicile certificate.

**2.5 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:**

- (i) **Manufacturing System Engineering:** B.E./B.Tech. in Mechanical, Production, Welding, Industrial, Manufacturing or equivalent.\*
- (ii) **Food Engineering & Technology:** B.E./B.Tech. in Food Technology/Food Engineering/Food processing/Food Science/Agricultural Engineering(with specialization in Food Processing Engineering/P.H.T.), M.Sc. in Food Science & Technology (with valid GATE score) or equivalent.\*
- (iii) **Instrumentation and Control Engineering:** B.E./B.Tech. in Instrumentation/Instrumentation & Control/Electronics/Electrical/Electronics & Communication/ Industrial Instrumentation/Bio-medical Engineering/Instrumentation or equivalent.
- (iv) **Polymer Technology :** B.E./B.Tech. in Chemical Engineering/Technology/Polymer/Paper Technology, M.Sc. in Polymer Science/Polymer Chemistry/Organic Chemistry/Physical Chemistry/Industrial Chemistry 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	Total Seats	For GATE/Set-VI qualified*	Sponsored
M. Tech. in Manufacturing Systems Engineering	25	16	09
M. Tech. in Food Engineering & Technology	25	16	09
M. Tech. in Instrumentation and Control Engineering	18	13	05
M. Tech. in Polymer	18	13	05

\* **Reservation as mentioned at 2.4.(b) I & 2.4 (b) III (i) 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(a) will be applicable for M.Tech. Programme also.

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

**d) Admission Procedure:**

- Student with 50% marks in Degree programme is eligible for admission to M.Tech.programme.
- Students aspiring to get admission in the Master degree Programmes need not to appear in the entrance examination SET-2007 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-2007.
- 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.
- If seats remain vacant then admission will be on the basis of SLIET entrance examination SET-VI.
- If still the seats remain vacant the admission shall be made on the basis of merit of degree programme

**2.6 Ph.D. Programmes:** No entrance application forms are there for the admission in Ph.D. in different branches of Science & Engineering but students interested can directly contact to Head of the concerned departments.

**2.7 IMPORTANT NOTES FOR ADMISSION TO ALL PROGRAMMES**

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

- Admission to the vertical entry seat shall be 50% of the admitted (on the cut off date i.e. 7.09.2005) strength of the students in a particular in the Certificate/Diploma in 2005-2006 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.
- 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 2.7(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 **2.7(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) Allotment of specialisation ( i.e Paper or Polymer) to vertically promoted students at **Sr.No.3 in Table-IV** shall be carried out on the basis of choice and merit list prepared with consideration of 60% weightage to Entrance Test (SET-V) and 40% weightage to the score in the qualifying diploma programme.
- (g) 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.
- (h) The seats prescribed for direct entry and vertical entry are not interchangeable in any case whatsoever that may be.
- (i) No result of any qualifying examination will be entertained after the date of first counselling of the programme.
- (j) A candidate not reporting for counselling will not be considered in subsequent counsellings, if any.
- (k) There will not be any negative marking.

**Note :** *Number of seats in Certificate, Diploma and Degree Programmes may be increased subject to the approval of competent authority.*

## CHAPTER-III

### SLIET ENTRANCE TEST – 2007, FEE STRUCTURE AND DISCIPLINE RULES

#### 3.1 SLIET ENTRANCE TEST-2007

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 24, 2007).

## 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. 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-2007. The syllabus can also be downloaded from the institute website [www.sliet.org](http://www.sliet.org).

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

## 2. SCHEDULE OF TEST :

Test	Date	Time	Paper
(a) SET-I	9.6.07	10.00-12.00 Hrs 14.00-16.00 Hrs.	Paper-I Paper-II
(b) SET-II	10.6.07	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
(c) SET-III	9.6.07	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
(d) SET-IV	24.6.07	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
(e) SET-V	24.6.07	10.00-12.00 Hrs. 14.00-16.00 Hrs.	Paper-I Paper-II
(f) SET-VI	9.6.07	10.00-12.00 Hrs.	

### 3. Centres of SET-2007 : (Numbers before the name of the city in following table indicate centre code)

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

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

#### 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.

#### 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 1.6.2007.

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 2007-2008 are over.

#### 6. MERIT LIST FOR DIRECT ENTRY SEATS : APPLICABLE FOR CERTIFICATE/ DIPLOMA/DEGREE PROGRAMMES

A candidate has to obtain a minimum of 20% (15% for SC/ST) 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 and Degree programme there will be a common merit list (of all categories) of all the eligible candidates, and the branch will be allotted as per merit & choice. 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, and (iv) Polymer Technology. 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 04, 2007. The copy of the result shall be sent to the various examination centres. **Result will also be available on Institute Website : <http://www.sliet.org>.** Request for marks and re-evaluation of the answer sheets will not be entertained.

#### 7. COUNSELLING :

Exact schedule of counselling shall be intimated through call letters or leading news papers. The call letter for counselling will be sent Under Postal Certificate (UPC) and the Institute shall not be

held responsible for any postal delay or non-receipt of call letters due to any other reason. The candidate who fails to attend any counselling due to any reason whatsoever shall not be eligible to attend subsequent counselling, if any.

### **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 either in English, Hindi or Punjabi. Question Papers for these subjects will be provided in English, Hindi and Punjabi.

### **3.2 GENERAL INFORMATION :**

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 first day of counselling of the concerned programme, failing which his/her candidature shall be deemed to have been cancelled.
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. Semester system will be followed for Certificate, Diploma, Degree & PG Programmes
4. Academic Calendar and study scheme alongwith syllabi shall be given to all the admitted students before/during start of the classes.
5. The medium of instructions is English for all the Programmes.
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.
7. Scholarship is provided to the meritorious candidates as per norms of Government of India.

### **3.3 WITHDRAWAL FROM ADMISSION**

A candidate after taking admission in the institute may withdraw his/her admission with a written request to the Chairman SET-2007. 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.

### 3.4 FEE STRUCTURE FOR ACADEMIC YEAR 2007-2008

<b>FEE PARTICULARS</b>	<b>Certificate</b>	<b>Diploma</b>	<b>Degree</b>	<b>PG (M.Tech.)</b>
<b>A. REFUNDABLE FEES: (Without any interest)</b>	Rs.	Rs.	Rs.	Rs.
Caution Money Institute/Hostel/Mess	5000	5000	5000	5000
<b>B. NON-REFUNDABLE FEE:</b>				
Admission Fee	250	250	500	500
Registration Fee	200	200	200	200
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	1730	1730
Alumni Association Fee	-	-	150	150
P.T.U. Registration Fee*	-	-	525	525
University Sports Facility Development Sports Fee	-	-	300	300
<b>Total</b>	<b>2000</b>	<b>3575</b>	<b>7285</b>	<b>7285</b>
*Subject to Revision by P.T.U.				
<b>C. OTHER FEE (PER SEMESTER (Non-refundable))</b>				
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	100	100
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
<b>Total</b>	<b>4230</b>	<b>5730</b>	<b>19525</b>	<b>12525</b>
<b>GRAND TOTAL (A+B+C):</b>	<b>11230</b>	<b>14305</b>	<b>31810</b>	<b>24810</b>
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

University Examination Fee (As per P.T.U. norms) ----

\*\* For Industry sponsored students the tuition fee shall be Rs.20,000/- per semester. Sponsored/Non GATE candidates are also required to pay Rs.2500/- to meet the contingency expenses, in addition to the tuition fees and other dues.

\*\*\*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.**

### 3.5 DISCIPLINE

Discipline builds the character. All the students are required to maintain good discipline and congenial environment while studying in the Institute.

#### Acts of Indiscipline

The students shall not indulge in any such activity which amounts to an act of indiscipline and misdemeanour such as:

1. Taking out processions and holding demonstration in the campus.
2. Gheraoing, intimidating and threatening the faculty/staff/students.
3. Interfering with the functioning of various committees
4. Disturbing the classes, assaulting teachers and students taking examination or in any other academic activity.
5. Defacing the building or any structure by writing slogans and pasting bills, damaging the institute property.
6. Keeping in possession any lethal weapon and bullet, unwanted/harmful instrument.
7. Possessing and/or consuming alcoholic liquor/drugs.
8. Rash driving, tripple riding driving on the pedestrian path and parallel driving in restricted areas/Institute campus.
9. Roaming and sitting in and around the campus in pairs and making obscene gestures in the campus.
10. Keeping two wheelers by Certificate students & four wheelers by Diploma and Degree students.
11. Use of mobile phone in the academic building
12. Any other acts of indiscipline decided by the competent authority not befitting to the presentation of the students.

Involvement in any of the above acts of indiscipline will be liable to severe disciplinary action like termination of registration in semester/studentship, imposition of conduct probation/fine, expulsion from the Hostel or even from the Institute or any other action as deemed fit by the competent authority. An undertaking on Judicial paper in the format given below is required to be submitted by the parents/guardian at the time of admission.

**Note: At the time of admission a satisfactory Character/Conduct Certificate for all the students will be necessary.**

#### FORMAT OF UNDERTAKING TO BE SUBMITTED BY THE PARENT/GUARDIAN OF THE CANDIDATE SEEKING ADMISSION IN SLIET, LONGOWAL

We \_\_\_\_\_ and \_\_\_\_\_ s/o, d/o \_\_\_\_\_ resident of \_\_\_\_\_ hereby solemnly declare and affirm as under:

That Mr./Ms..... is a candidate for admission to Certificate/Diploma/Degree/P.G. Programme at Sant Longowal Institute of Engineering & Technology, Longowal in the academic session 2007-2008.

That if admitted, he/she will never indulge in any act of indiscipline, and shall abide by all the rules and regulations of the institute and hostel.

That if he/she is found involved in any act of indiscipline during his/her stay in the Institute, then disciplinary action as deemed fit by the Institute may be taken against him/her.

Date:

Place:

Signature of Candidate

Signature of the Parents/Guardian

**CHAPTER-IV**  
**SYLLABUS OF SLIET ENTRANCE TEST SET-I**  
**FOR ADMISSION TO CERTIFICATE PROGRAMME, 2007**

**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 awareness, 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. Correction of given sentences
2. Fill in the Blanks
3. Active Passive Voice
4. General Knowledge/Awareness
5. Aptitude Test

**MATHEMATICS**

**Marks 75**  
**(75 Questions)**  
**Syllabus :**

**1. 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.

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

**3. 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.

**4. 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.

**5. 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, 2007

#### 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
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. 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. 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. 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. 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. 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).

### **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, 2007**

**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.

**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.

**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. 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.

**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. 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).

## 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, sp<sup>2</sup> and sp<sup>3</sup>) 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, velocity and 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 mas, motion of centre of mass and momentum conservation.

**MOMENT OF INERTIA:** Moment of Inertia (M.I.) of rigit 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. He is being accused \_\_\_\_\_ theft.

(a) with (b) of (c) for (d) about

Q2. The first term of a G.P. whose second term is 2 and sum to infinity is 8 will be

(a) 6 (b) 3 (c) 4 (d) 1

## **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 of thermodynamics, first law of thermodynamics, internal energy, entropy, Clausius and Kelvin-Planck statement of second law, different thermodynamic processes like isobaric, isochoric, isothermal. Elements of heat transfer, conduction, convection, radiation.

**Applied Mechanics:** Concept of mechanics & applied mechanics, laws of force, moments, friction and laws of motion. Stress & strain, concept of load, tensile, compressive and shear stress & strains.

**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 operation, 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, Economic Order Quantity 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.

## FOOD TECHNOLOGY

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 Programme-2007

#### Pattern of SET-VI

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

**Time : 2 Hours**

**Marks:100**

**(100 Questions)**

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

**TOM & SOM:** Cams, Gyroscope, Balancing, Vibrations, Bending & Deflection of Beams, Pressure Vessel, Rotating Rings & Cylinders.

**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 Programmimg, 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 measurement, 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. Metal Casting & Fabrication: -Types of Molding Sand, Solidification of Metals Design of Risers, Various Molding & Casting processes. Arc Welding Process, TIG, MIG, CO<sub>2</sub>, Plasma, Resistance Welding etc., weldability of steel, CI., Stainless steel & Aluminium, Welding defects, Powder Metallurgy.

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

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

**Computer Integrated Manufacturing System (CIMS):** Type of manufacturing system, Group Technology, Components of CIM, Computer Aided Part Programming, Adaptive Control System.

## FOOD ENGINEERING & TECHNOLOGY

**Time : 2 Hours**  
**Marks:100**  
**(100 Questions)**

**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

**Time : 2 Hours**

**Marks:100**

**(100 Questions)**

**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 TECHNOLOGY

**Time : 2 Hours**  
**Marks:100**  
**(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 – bulk, solution, emulsion and suspension. Structure property 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 process 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 emergent test, stain 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, Planck's law, Kirchoff's law, Stefan Blodzman 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 monometers, gages and pressure transducers, Temperature measurement: Expansion thermometer, Resistance thermometer, Thermocouple, and pyrometers, measurement of viscosity, conductivity, humidity and PH.

### Appendix-I

#### INSTRUCTIONS FOR FILLING AND DESPATCH OF 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 ( $\square$ ) 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 ( $\circ$ ) 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: AWALJIT SINGH

A	W	A	L	J	I	T
---	---	---	---	---	---	---

- 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 : GN=General, SC=Schedule Caste, ST=Schedule Tribe, PH=Physically Handicapped).

A Candidate belonging to NRI/NRI sponsored category will fill-up as shown below:

**5. CATEGORY CODE**

(Any one from 1 to 5)

GN	1
SC	2
ST	3
PHC	4
NRI	5

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. 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  
FT = Food Engineering & Technology  
IN = Instrumentation & Control Engineering  
ME = Manufacturing System Engineering
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 corresponding circles. For example 24.5.1981 be entered as follows:

16. DATE OF BIRTH							
D	D	M	M	Y	Y	Y	Y
2	4	0	5	1	9	8	1

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.
18. **Choice of Centres:** A list of centres of SET-2007 is given at **page 15** 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. **Declaration:** The declaration is to be signed by the candidate and countersigned by parent/guardian. Unsigned forms will not be accepted.
20. **Telephone no. with STD code:** Write your telephone number with STD code in the boxes provided and on 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-2007. The application forms, must be sent in this envelope by registered post/speed post so as to reach the office of the Chairman, SET-2007 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-2007 is the **30<sup>th</sup> April, 2007**. 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-2007" can also be submitted personally in the office of the Chairman, SET-2007 on any working day during working hours on or before **Friday the 30<sup>th</sup> April, 2007**.

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

## **Appendix-II**

### **INSTRUCTIONS FOR FILLING RELEVANT ENTRIES AND PROCEDURE TO ATTEMPT OBJECTIVE TYPE QUESTIONS ON 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.

**Main Features:**

- Established by Ministry of Human Resources & Development, Government of India
- Eco-friendly campus developed over 451 acres.
- Doctorate, Post-graduate, Degree, Diploma and Certificate Programmes
- All Degree Programmes accredited by NBA (AICTE, New Delhi)
- Laboratories/workshop equipped with modern equipments
- Digital library with all modern facilities
- Highly motivated, qualified and Internationally renowned faculty
- Liaison with Institutes of National and International repute
- Non-formal courses for community development
- Sports and recreational facilities, student activity centre, gymnasium and stadium
- Round the clock medical facilities
- Separate hostels for boys (8), girls (2) and P.G. students (1)
- Internet/Networking facility in academic buildings and hostels, STD/ISD booths and Transport facility

**Dates of Examination:**

- |                                   |                       |
|-----------------------------------|-----------------------|
| • Certificate Programme (SET-I)   | Saturday June 9, 2007 |
| • Diploma Programme (SET-II)      | Sunday June 10, 2007  |
| • Degree Programme (SET-III)      | Saturday June 9, 2007 |
| • M.Tech./P.G. Programme (SET-VI) | Saturday June 9, 2007 |
| • SET-IV and SET-V                | Sunday June 24, 2007  |

Last date for receipt of complete application form : Friday, April 30, 2007

[www.sliet.org](http://www.sliet.org)

For any Information please contact:  
Dr. S.S. Dhaliwal  
Chairman, SET-2007

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