INFORMATION BROCHURE

for Admission to Ph.D. Programmes 2026

NIRF 2025

ENGINEERING RANKING

79

SANT LONGOWAL INSTITUTE OF ENGINEERING & TECHNOLOGY

Deemed-To-Be-University, Under Ministry of Education, Govt of India

LONGOWAL, DISTT. SANGRUR (PUNJAB)-INDIA- 148106

for Details: visit us www.sliet.ac.in, www.slietexam.co.in

Contact us: 01672 253108

E-mail: phdadmissions@sliet.ac.in

SECTION:I

Common Information for admission in Ph.D. Programme (SET-V)

APPLICATION FEE FOR Ph.D. ENTRANCE TEST-2026

Mode of registration shall be **ONLINE** only at www.sliet.ac.in and fee details are as follows:

Categories	Application Fee
General and Other Categories (Boys)	Rs.1750/-*
General and Other Categories (Girls)	Rs.1250/-*
SC/ST Categories (Boys and Girls)	Rs.1000/-*

Mode of Payment: Net Banking/Debit card/Credit card/UPI * 18% GST & Bank charges Extra

For any Information Contact: **Dr. Surinder Singh, Dean (R & C)**
Fax No. 01672-253108
Email: phdadmissions@sliet.ac.in

ONLINE Application : ***www.sliet.ac.in , www.slietexam.co.in***
Help Desk Numbers: (9.00A.M. to 5.00P.M. on working days) : 01672-253108

IMPORTANT DATES

Last date for receipt of complete online Application Form (Ph.D.) : **August 05, 2026**

ADMISSION SCHEDULE

Admission Procedure and Dates of Examination for Ph.D. admissions:

1. **Entrance Test Ph.D. (SET-V):** **Aug 06, 2026 Thursday 11:00 – 13:00 Hours**
   The entrance examination of SET-V will be conducted in Pen Paper Mode.
2. **Declaration of Result (*SET-V*):** **Aug 07, 2026**

Counselling Schedule
Ph.D. (SET-V)

Schedule	Date	Time
Call of Applications	01.03.2026 to 05.08.2026	
Examination Date	**06.08.2026 [Thursday]**	**11:00-13:00 hrs at SLIET Longowal Only (Pen and Paper mode)**
Entrance Exam Result	**07.08.2026**	
Date of Interview/Counselling/Fee submission	07.08.2026	10:00 A.M. onwards for NET/GATE qualified, SET qualified candidates in the office of Dean R & C. Detail will be notified on the institute website

***This is a tentative schedule.**

NOTE-

1. **FOR UPDATES VISIT INSTITUTE WEBSITE TIME TO TIME (**www.sliet.ac.in**).**

2. **Candidate must provide the correct information to avoid disqualification from admission. The correspondence address, Landline/Mobile Phone Numbers and Email ID should be checked thoroughly as any of these mode(s) will be used for contacting the candidate and in case of wrong information in this regard, the responsibility lies with the candidate ONLY. The failure in receiving correspondence by the candidate due to the fault of the third party will not be the responsibility of the institute.**

IMPORTANT INFORMATION

The Institute offers modular pattern of education in emerging areas of Engineering, Technology and Sciences, Humanities and Management. Following Programmes are offered by the institute:

(a) Integrated Certificate-Diploma (ICD) (b) Bachelor of Engineering (B.E.) (c) Integrated B.Sc.-M.Sc. Programmes
(d) Master of Technology (M. Tech.) (e) Master of Science (M.Sc.) (f) Doctor of Philosophy (Ph.D.)

2.1 Mode of Admission

The Entrance Test conducted for admission to various programmes is termed as **SLIET ENTRANCE TEST (SET)**. The details of test for admission to the Ph.D. program are given in **Table 2.1**.

Table 2.1

Name of Programme	Entrance Test	Date	Time
Ph.D. (Full/Part Time)	SET V	Aug 06, 2026	11:00-13:00 Hours

2.2 Pattern of Examination

For SET V, the paper shall be of two hours duration and of 100 marks. The syllabi and distribution of marks for SET V are given in the respective section.

Note : . ***There shall be NO NEGATIVE marking for SET-V (Ph.D. Programmes)***. No deduction of marks will be made in case no response is indicated for a question in the Answer Sheet. **For queries related to PhD admissions, the applicants should send request at phdadmissions@sliet.ac.in**

2.3 Examination Centres of SET-2026:

The Examination Centre for Ph.D. Entrance Test will be SLIET, Longowal only.

2.4. Admit Cards

Admit Card will be sent on the email provided by the candidate.

2.5. Merit List

- All admissions will be made purely on merit determined for admission. In the event of a tie among two or more candidates, elder candidate in age as per the relevant entry in the matriculation certificate shall be placed higher in merit. Again, if there is a tie in age (date of birth), the candidate having higher marks in qualifying examination shall be placed higher in merit. Wrong filling of Date of Birth in Application Form will lead to disqualification of candidature.
- The qualifying marks in test for admission is 50%.
- **For admission to Ph.D. programmes as per page number 07 to 10 Section II**
  Admission to the Ph.D. programmes will be based on **TWO STAGE PROCESS** as per UGC guidelines.

The lists of qualified candidates as per their rank/merit will be displayed on the notice board of the Institute. **Result will also be available on Institute Website: www.sliet.ac.in**

2.6. Counseling and Document Verification

For PhD program, offline counseling & fee submission will take place on 07/08/2026 (afternoon) in the Dean (R& C)

office and the qualified candidates have to appear in person with original documents mandatory for admission.

2.7. Medium of Examination:

The medium of entrance examination for SET-V will be English.

2.8 Rules of Reservation Applicable to All Admissions

2.8.1 Reservation of Seats:

Seats to which reservations apply: The reservation policy shall be applicable for the seats meant for admission to Ph.D. programmes.

Extent of Reservation: The extent of reservation will be as under:-

a)	Scheduled Caste (SC)	**15%**
b)	Scheduled Tribes (ST)	**7.5%**
c)	EWS reservation (General)	**10%**
e)	Other Backward Classes (OBC-NCL)	**27%**

[OBC reservation will be available to non-creamy layer only. The details of non-creamy layer will be as per the stipulations set out hereunder at 2.8.2(iii)]

f) For Physically Handicapped (PH) **5%** (within respective category including General Category)

g) International and NRI candidates can apply for admission through DASA/Study in India portal

Reservation will be as per latest guidelines issued by the Government of India from time to time.

2.8.2. Procedure for reservation

i) Seats remaining unfilled in OBC-NCL category will be offered to general category, as per instructions of Govt. of India.

ii) Eligibility for SC/ST Reservation: For applying to avail reservation under SC/ST category, the candidates will be required to submit adequate proof / certificate, issued by the competent authority as may be prescribed from time to time in evidence of his/her belonging to respective category.

iii) Eligibility for OBC (Non Creamy Layer) Reservation: For applying to avail reservation under OBC-NCL category, the candidates will be required to submit adequate proof /certificate, issued by the competent authority as may be prescribed from time to time in evidence of his/her not belonging to creamy layer. The criteria of creamy layer will be applied as may be prescribed by the Govt. of India from time to time. At present, notification issued by the Ministry of Human Resource Development, New Delhi, prescribes that the candidates whose family income does not exceed Rs 8 lacs per annum as per OM No. 36033/1/2013-Estt.(Res) dated 13 September, 2017 (the amount will be governed by latest guidelines of Govt. of India) and do not fall within the category of creamy layer. **The above proof/certificate should pertain to the financial year 2025-26 and certificate issued on or after 01.04.2026 in the given format (Appendix-I) will be considered.**

iv) For claiming seats reserved for Physically Handicapped candidates, the minimum Degree of disability should be 40%. Seats falling to the share of Physically Handicapped candidates in various branches are interchangeable depending upon the availability/suitability of candidates. However, in total, the seats will not exceed the prescribed quota of 5%. To claim reservation under Physically Handicapped category, the candidate is required to submit a certificate from the Chief Medical Officer of the district concerned clearly mentioning the extent/degree of disability. The admission to this category will be governed by the rules of Govt. of India, applicable from time to time. The decision of the admission committee, regarding the suitability of a candidate for a particular branch for claiming reservation under this category, shall be final and binding on the candidates.

v) Eligibility for EWS Reservation: EWS certificate in the prescribed format (Annexure-II). The certificate must be issued on or after 01.04.2026.

vi) The seats remaining vacant in any branch due to non-availability/suitability of eligible candidates belonging to physically handicapped category will be shifted to the respective main category in that branch.

vii) A candidate seeking admission against any reserved seat/ territorial quota if fails to get admission against the said reserved seat/quota for any reason, may immediately apply to the Dean R & C for consideration of his claim for admission

in non-reserved category/quota. For considering the said claim, however, no separate call letter shall be issued to such candidates, and he/she will have to appear in the counseling for filling up the seats other than reserved seats/quota at his/her own responsibility. The claim of such a candidate shall be considered in order of his/her merit and choice of trade/branch/specialization as well as availability of seats in the said trade/branch/specialization in the unreserved category/quota aforesaid.

viii) Director, SLIET reserves the right to transfer the unfilled seats of one quota/category to another quota/category as per existing rules/norms.

Note: Being Centrally Funded Technical Institute, candidates would be considered for reservation and other benefits under SC/ST/OBC –NCL quota as per the guidelines issued/list published by Government of India for the purpose. In qualifying examinations, where applicable, 5% relaxation in percentage will be given to SC/ST/OBC-NCL/PH candidates

2.9 The Following Conditions shall Apply for Admission to the Concerned Programme:

(a) During counseling, the candidates shall be admitted **PROVISIONALLY** in all the programmes subject to verification of result and eligibility on the last day of submission of documents i.e. **30.09.2026**. Candidates must ensure their eligibility for the programme in which they are getting admission. The admission shall be liable to be cancelled due to non-fulfillment of requisite qualification at any stage.

(b) Semester system will be followed for all the Programmes.

(c) The medium of instructions is English for all the Programmes.

(d) It is expected that the applicants will have good general physique with 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 (Appendix-III) of fitness from a Govt. Doctor not below the rank of A.M.O.

(e) Scholarships are provided to the meritorious candidates as per norms of Government of India notified from time to time.

(f) Request for re-evaluation of the answer sheets will not be entertained.

2.10 Fee Structure (Ph. D. Programme) for Academic Year 2026-27

INSTITUTE FEES		Full Time	Part Time
A. REFUNDABLE CAUTION MONEY: (WITHOUT ANY INTEREST) To be paid at the time of admission	Caution Money Institute	5000	5000
	Total (A)	**5000**	**5000**
B. NON-REFUNDABLE FEES (To be paid at the time of admission)	Admission Related Fee, Students Activity Related Fee & Library Related Fee	7700	5200
	Alumni Fee	2000	2000
	Total (B)	**9700**	**7200**
C. OTHER FEE PER SEMESTER (Non-Refundable)	Development Fee	1100	600
	Tuition Fee	6600	6600
	Other Charges	1100	600
	Total (C)	**8800**	**7800**
	(i) Grand Total (A+B+C) (in ₹)	**23500**	**20000**

HOSTEL FEES*		Full Time	Part Time
D. REFUNDABLE CAUTION MONEY: (WITHOUT ANY INTEREST) To be paid at the time of admission		10000	10000
Hostel Fee Per Semester (Non-Refundable)	Single Occupancy (E)	5500	5500
	Multiple Occupancy(F)	4500	4500
(ii) Total (D+E)	**Single Occupancy**	**15500**	**15500**
(iii) Total (D+F)	**Multiple Occupancy**	**14500**	**14500**
(i+ii) Grand Total (in ₹)	**Single Occupancy**	**39000**	**35500**
(i+iii) Grand Total (in ₹)	**Multiple Occupancy**	**38000**	**34500**

* Applicable to those students only, who opt to reside in hostels.

- The fee structure may be revised from time to time with the approval of competent authority.
- The amount of Group insurance scheme (GIS) is to be paid annually by each student as decided by the institute applicable on the date of admission.
- **Admission and semester fee for Institute Employee will be applicable as per SLIET/Dean(A)/2021/2233 dated 13/10/2021**.

2.11 Withdrawal from Admission and Refund of Fee

Withdrawal: The candidate has to make a written request to the **Dean (R and C)** in the prescribed format available in Dean(R&C) office for the withdrawal of his/her admission and get the same approved.

Refund of Fee: After approval of withdrawal of admission from **Dean R and C**, the candidate is required to complete No Dues through ERP module from all the Departments/Sections concerned of the Institute. **Fee will be refunded as per UGC calendar for Ph.D. programmes of respective session. No refund will be initiated in case of incomplete "No Dues Certificate". The refund will be made as per Institute norms.**

Note: ***In case, the admission is withdrawn before the start of academic session/classes, then there is no need to submit "No Dues Certificate" for refund of fee.***

2.12 Legal Jurisdiction

All disputes pertaining to the counseling and admission for all ICD/B.E./Post-Graduate (M.Tech./M.Sc.) and Ph.D. Programmes of SLIET, Longowal shall fall within the jurisdiction of Sangrur (Punjab) only.

2.13 Women Safety

UGC notification dated 02nd May, 2016 (Prevention, Prohibition and redressal of sexual harassment of women employees and students in higher educational institutions) Regulation 2015 shall be applicable in the institute.

2.14 Anti Ragging

AICTE notification dated 01st July, 2009 (Prevention and prohibition of Ragging in technical Institutions, Universities including Deemed-to-be-Universities imparting technical education.) & amendments shall be applicable in the institute.

2.15 Disclaimer

The statement made in the information brochure and all other information contained herein is believed to be correct at the time of publication. However, the Institute reserves the right to make changes at any time without notice, in and additions to the regulations, conditions governing the admission, requirements, seats, fees and any other information, or statements contained in this information brochure. No responsibility will be accepted by the Institute for hardship or expenses encountered by candidates / any other person for such changes, additions, omissions or errors, no matter how those are caused.

SECTION:II

Eligibility, Syllabus for test and other details for admission in Ph.D. Programme (SET-V)

The award of the Ph.D. Degree is in respect of high achievements, independent research, and application of scientific knowledge to the solution of scientific and technical problems. The admission to all Ph.D. programs will be strictly as per institute rules. The admission will be done in the following disciplines and specializations:

Sr. No.	Disciplines	Code	Field of specialization to be considered for admission
1	Chemical Engineering	Ph.D.-CE	In current research area of Dept. of Chemical Engineering as given on Dept. Website.
2	Chemistry	Ph.D.-CHY	UG Level: B.Sc. with Chemistry as one of the subject PG Level: M.Sc. with Chemistry
3	Computer Science and Engineering	Ph.D.-CSE	As per decision of Department Research Committee
4	Electrical and Instrumentation Engineering	Ph.D.-EIE	As per decision of Department Research Committee
5	Electronics and Communication Engineering	Ph.D.-ECE	1. Electronics and Communication Engineering 2. Electronics and Telecommunication Engineering 3. Electrical and Electronics Engineering 4. Instrumentation and Control Engineering 5. Computer Science Engineering
6	Humanities (English)	Ph.D.-ENG	As per decision of Department Research Committee
7	Food Engineering and Technology	Ph.D.-FET	As per decision of Department Research Committee
8	Management	Ph.D.-MGT.	As per decision of Department Research Committee
9	Mathematics	Ph.D.-MATH	UG Level: B.A./B.Sc. with Mathematics PG Level: Mathematics/Applied Mathematics/Industrial Mathematics
10	Mechanical Engineering	Ph.D.-MECH.	Mechanical/Manufacturing/Welding/Industrial & Production/ Thermal/ CAD CAM/Energy System and other areas related to Mechanical Engineering
11	Physics	Ph.D.-PHY	1. Materials Science and Engineering 2. Radiation Physics 3. High Energy Physics 4. Microwave Studies

The seat matrix (available seats in various disciplines) shall be displayed on the institute website.

Admission to Ph.D. Programs is available in following categories:

(i) Full Time (with fellowship) *
(ii) Full Time (without fellowship)
(iii) Part Time
(iv) Ph.D. Executive (Part-Time) for working professionals except academic institutions.

*The student in the Full Time (with fellowship) shall be governed by rules and regulation of Ministry of Science & Technology, Reference no. SR/S9/Z-09/2012 dated 21.10.2014, Ministry of Human Resource Development F. No. 17-2/2014-TS.1 dated 02.03.2015 and Ministry of Education F.No.10-8/2022-TS.VII dated 16.03.2022 or any other latest instructions issued by MoE, GOI from time to time or as per the decision taken by the Senate/BOM of the institute.

The guidelines of UGC Notification (Minimum Standards and Procedures for Award of Ph.D. Degree) Regulations, 2022 dated: 07/11/2022 shall be applicable for the award of Ph.D. degree.

Reservations will be as per Government of India norms.

I. Eligibility for scholars under various categories:

1. Full-time scholars with institute fellowship (Category- 1):

For the candidates who have qualified GATE/NET (excluding NET-category-3) during the last 5 years (Year- 2022 onwards) in Engineering/Technology/Sciences/ Humanities & Management.

Eligibility:

(i). (a). **Engineering & Technology (Except Food Engineering & Technology, Chemical & Mechanical Engg.)**: B.E./B.Tech. and M.E./ M.Tech. OR Integrated Master's Degree in Engineering /Technology Degree in relevant branch OR equivalent Master's Degree along with qualified GATE/NET.

(b). **Food Engineering & Technology**: Bachelor's degree in Science/Engineering/Technology with Master's Degree in Food Science/ Technology OR equivalent Master's Degree along with qualified GATE/NET

(c). **Chemical Engineering:** Full Time with institute fellowship: M.Tech. in Engineering / Technology with GATE/NET along with Bachelor's degree in Engineering /Technology in any discipline. OR M.Sc. in any discipline with valid qualified JRF-NET/GATE OR M. Pharma with qualified GATE/GPAT score.

(d). **Mechanical Engineering**: Bachelors in Engineering /Technology/Engineering Science/Allied Sciences (in relevant field) and Masters in Engineering/Technology/Engineering Science/Allied Sciences (in relevant field)/Management. In view of the diversified areas of Engineering Science and Allied areas, DRC of the department will review the eligibility criteria of the applicant and decide accordingly, regarding acceptance or rejection of the candidature of the applicant along with qualified GATE/NET

(ii). **Science:** Bachelor's degree in Science/Technology and Master's degree in Science/Technology in relevant discipline OR integrated Master's Degree in Science/Technology OR equivalent degree in the Master's Degree along with qualified GATE/NET

(iii). **Humanities (English):** Bachelor's degree in any stream and Master's degree in English OR equivalent along with qualified GATE/NET

(iv). **Management:** Bachelor's degree in any stream and Master's degree in Management/Engineering in relevant discipline OR equivalent degree in the Master's degree- MBA/ or equivalent Post Graduation in other stream of Management (HRM/Marketing/Hospitality and Tourism Management/Hotel Management, etc./PG in Engineering/Commerce/Economics, etc.) along with qualified GATE/NET.

NOTE:

(i). Minimum eligibility percentage for Ph.D. admission shall be 60% in UG and 55% marks in PG for Engineering, Technology and Science and 55% marks in PG for Management and Humanities.

(ii). Relaxation of 5% marks or equivalent grade may be allowed in qualifying marks for reserved categories (SC/ST/OBC-NCL/Differently abled/Economically weaker section (EWS), etc.) shall be as per Government of India guidelines.

(iii). Relevant branch/discipline shall be as per AICTE/UGC guidelines issued from time to time, as applicable.

(iv). The validity of GATE /NET shall be considered as per AICTE Doctoral Fellowship (ADF) guidelines OR the guidelines issued by CSIR/UGC. These candidates eligible for admission in Full Time PhD program with fellowship.

2. Eligibility for scholars under categories (Category- 2 & 3):

a. Full-time scholars without institute fellowship (Category- 2)
b. Part-time scholars (Category- 3)

In addition to the qualifying degrees, as applicable for Full Time candidates as detailed in above said Point No. I (for Category 1) and amended from time to time. For Non-GATE & Non- NET candidates who are interested for Full-time scholars without institute fellowship & Part-time scholars, written test will be conducted on 06/08/2026 from 11.00 A.M. in the Committee Room of Dean (R&C), 1st Floor, Library Block.
The final selection will be based on weighted combined performance of the written test and interview as per institute PhD rules.

3. Eligibility for admission of working professional in Ph.D. Executive (Part-Time) program (Category 4):

(i) Eligibility Criteria:

a) Reputation of the company or organization where the candidate is working:

- The companies (private / government), research organizations, Ministries of Central and State Governments wherein the candidate is presently employed should have well established reputation & image.
- In case the department is not sure about the company / organization, the decision will be taken by a committee comprising of the Dean (Academic), Dean (R&C), HOD concerned and put up before the Director for approval.

b) Defense or other Ministries of the Government of India or any other government organizations.
c) Established industrial research and development organizations
d) Autonomous bodies and public undertakings Excluding Academic Institutions.
e) Minimum of TWO years of professional experience (acquired after obtaining the qualifying degree and completed before the starting of the semester in which admission is sought). This experience may include stints at multiple organizations.

(ii) Requisite Qualifications:

The educational qualifications will be same as required for category 1, 2 and 3 above. However, the Candidates must fulfil ONE of the following additional requirements:

(a) GATE {who have qualified GATE during the last 5 years (Year- 2022 onwards)}.
(b) Selected through National Eligibility Test – UGC NET including lectureship (Assistant Professorship) {who have qualified GATE during the last 5 years (Year- 2022 onwards)}.
(c) Selected through a National level examination conducted by Ministry of Education (MoE) or its agencies /Institutions such as UGC/ IIT/ IISc. / IISER/ IIIT etc.
(d) Selected provisionally for the DST-INSPIRE Fellowship (provisional award letter to be produced).
(e) Qualified in written test conducted by SLIET with minimum 50% marks. However, a relaxation of 5% shall be given to candidates belonging to SC/ST/OBC(NCL)/PWD/EWS categories.

4. NOC for Part-Time and Executive (Part-Time)

Candidate needs to provide "No Objection" Certificate (APPENDIX- VIII) issued by his / her organization for pursuing Ph.D. under the proposed scheme: "Ph.D. program for Working Professionals and Part-Time candidates".

II. Requirement of Courses & Examination:

As applicable for scholar admitted in the Ph.D. program of the institute.
Course Work: The scholar can take up the course work through NPTEL/SWAYAM /MOOC or through assignments based on the course content assigned to him / her through a teacher. However, evaluation of the scholar while completing the course work through assignment as per the Ph.D. Rules and Regulations of the Institute. 8 (eight) Weeks NPTEL/SWAYAM/MOOC course would be considered equivalent to 3 credits and 12 weeks NPTEL/SWAYAM would be considered as 4 credits. The list of the courses to be offered to the scholars shall be provided by the DRC well in time before the start of such courses at National level. The mandatory course (s) may be taken up by the scholar in the offline /self-study mode offered by the institute or an equivalent course (s) through NPTEL/SWAYAM/MOOC. The Course credit as prescribed in the Ph.D. rules and regulations of the Institute shall also be applicable for these categories of research scholars. For award of Ph.D. to working professionals, the Ph.D. rules and regulations shall be applicable, except the relaxation as above.

ADMISSION PROCEDURE:

(a) Admission to the Ph.D. programs for candidates NOT qualified GATE/NET score will be based on the TWO STAGE PROCESS through:

(i) SLIET ENTRANCE TEST (SET-V) with qualifying marks as 50% (45% for SC/ST/OBC NCL/PWD & Economically Weaker Section (EWS), relaxation shall be given as per Government of India guidelines).
The syllabus of the Entrance Test shall consist of 50% of research methodology and 50% shall be subject specific.

(ii) An INTERVIEW wherein the candidates are required to discuss their research interest/area through a presentation before a duly constituted Departmental Selection Committee. The interview/viva voce shall also consider the following aspects.

- The candidate possesses competence for the proposed research.
- The research work can be suitably undertaken at the institute.
- The proposed area of research can contribute to new/additional knowledge.

(b) The eligible candidates who have qualified UGC/CSIR (JRF) NET with fellowship / NET (ASRB) with fellowship / GATE are EXEMPTED FROM APPEARING for the entrance examination. The validity of the GATE/NET shall be considered as per AICTE Doctoral Fellowship (ADF) guidelines (who have qualified GATE/NET in the last 5 years, i.e. Year- 2022 onwards) OR the guidelines issued by CSIR/UGC. However, they should submit the proof of the qualifying examination. However, they have to APPLY ONLINE. These candidates have to appear for the interview.

(c) The candidates who fulfill the conditions of eligibility criteria can apply online by 05.08.2026.

(d) MERIT List: The interview will be applicable to the candidates who qualify SET-V and others who are EXEMPTED FROM APPEARING in SET-V as per (a, and b) above.
Admission through NET/ GATE the following criteria will be followed:
70% weightage: Presentation (35%) and competency for the research (35%) &
30% weightage for interview/viva-voce.
Admission through SLIET Entrance Test (SET):
Candidates who have secured 50% marks in the entrance test are eligible to be called for the interview/viva-voce, however, a relaxation of 5% marks from 50% to 45% shall be given to candidates belonging to SC/ST/OBC (NCL)/PWD/EWS categories. The following criteria will be followed:
A weightage of 70% for the entrance test and
30% for the performance in the interview/presentation/viva-voce.
Admission of International students:
Candidate will have to apply through study in India portal.

(e) The decision of duly constituted Departmental Selection Committee will be final in respect of suitability of candidate and his/her qualifications for a given discipline.

(f) The ordinances, rules & regulations for Ph.D. programs of SLIET, Longowal shall be applicable to all the successful candidates as in force from time to time.

(g) The counseling for Ph.D. programs will be offline and qualified candidates have to appear personally on the day of counseling. The candidates will have to bring original documents for admission. The list of the required documents will be displayed on the website at the time of declaration of results.

SYLLABUS OF SLIET ENTRANCE TEST (SET-V)
For admission to Ph.D. Programme-2026 [Odd Semester]

SLIET Entrance Test (SET-V) for admission to Ph.D. Programme will consist of one paper of two hours duration. This paper will have 100 objective type questions of 100 marks.

Note: The examination will be conducted in Pen and Paper mode only. There shall not be any negative marking for wrong answers.

SYLLABUS

Marks: 100 (100 questions) **Time: 02 Hours**

Common for all Ph.D. Programmes
Research Methodology

Marks: 50 (50 questions)

Research Aptitude, Reasoning, Data interpretation, information technology, people and Environment, Numerical Ability, Numerical Analysis, Statistics, Communication Ability, Higher education system (Governance, Policy and administration)

Ph.D. (Chemical Engineering)

Marks: 50 (50 questions)

Industrial Stoichiometry and Thermodynamics: Composition/concentration and their different representations, unit conversion, Chemical Stoichiometric equations. Steady state mass and energy balances. First and Second laws of thermodynamics. First law application to close and open systems. Second law and Entropy, Thermodynamic properties of pure substances: equation of state and departure function, properties of mixtures: partial molar properties, fugacity, excess properties and activity coefficients; phase equilibria: VLE of systems; chemical reaction equilibria.

Fluid Mechanics and Mechanical Operations: Fluid statics, Newtonian and non-Newtonian fluids, Bernoulli equation, flow through pipeline systems, flow meters, pumps and compressors, packed and fluidized beds, elementary boundary layer theory. Size reduction and size separation; free and hindered settling; centrifuge and cyclones; thickening and classification, filtration, mixing and agitation; conveying of solids.

Heat Transfer: Conduction, convection and radiation, heat transfer coefficients, steady and unsteady heat conduction, boiling, condensation and evaporation; types of heat exchangers and evaporators.

Mass Transfer: Fick's law, molecular diffusion in fluids, mass transfer coefficients, film, penetration and surface renewal theories; momentum, heat and mass transfer analogies; stagewise and continuous contacting and stage efficiencies; HTU & NTU concepts. Separation processes such as distillation, absorption, leaching, liquid-liquid extraction, drying, humidification, dehumidification and adsorption.

Chemical Reaction Engineering: Theories of reaction rates; kinetics of homogeneous reactions, interpretation of kinetic data, single and multiple reactions in ideal reactors, non-ideal reactors; residence time distribution. Catalysis, and catalytic reactions.

Instrumentation and Process Control: Instruments for the measurement of process variables (Temperature, Pressure, level, flow and viscosity), transfer functions and dynamic responses of simple systems, controller modes (P, PI, and PID); control valves; analysis of closed loop systems.

Energy and Environment: Air, water and land pollution and its impact; different pollutants and their impact on the environment. Outline of pollution control and pollution control regulations. Fossil fuels, biofuels, and other renewable energy sources. The energy environment interrelationship.

Chemical Technology: Inorganic chemical industries; sulfuric acid, NaOH, fertilizers (Ammonia, Urea, SSP and TSP); natural products industries (Pulp and Paper, Sugar, Oil and Fats); petroleum refining and petrochemicals; polymerization industries; polyethylene, polypropylene, PVC and polyester synthetic fibres.

Ph.D. (Chemistry)

Marks: 50 (50 questions)

Inorganic Chemistry: Chemical periodicity; Structure and bonding in homo-and hetero-nuclear molecules, including shapes of molecules (VSEPR Theory); Concepts of acids and bases, Hard-Soft acid base concept, Non-aqueous solvents; Main group elements and their compounds: Allotropy, synthesis, structure and bonding, industrial importance of the compounds; Transition elements and coordination compounds: structure, bonding theories, spectral and magnetic properties, reaction mechanisms; Inner transition elements: spectral and magnetic properties, redox chemistry, analytical applications; Organometallic compounds: synthesis, bonding and structure, and reactivity. Organometallics in homogeneous catalysis; Cages and metal clusters; Analytical chemistry-separation, spectroscopic, electro-and thermo analytical methods;

Bioinorganic chemistry: photo-systems, porphyrins, metallo-enzymes, oxygen transport, electron-transfer reactions; nitrogen fixation, metal complexes in medicine; Characterization of inorganic compounds by IR, Raman, NMR, EPR, Mossbauer, UV-vis, NQR, MS, electron spectroscopy and microscopic techniques; Nuclear chemistry: nuclear reactions, fission and fusion, radio analytical techniques and activation analysis.

Physical Chemistry: Basic principles of quantum mechanics: Postulates; operator algebra; exactly-solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom, including shapes of atomic orbitals; orbital and spin angular momenta; tunneling; Approximate methods of quantum mechanics: Variational principle; perturbation theory up to second order in energy; applications; Atomic structure and spectroscopy; term symbols; many-electron systems and antisymmetry principle; Chemical bonding in diatomics; elementary concepts of MO and VB theories; Huckel theory for conjugated π-electron systems; Chemical applications of group theory; symmetry elements; point groups; character tables; selection rules; Molecular spectroscopy: Rotational and vibrational spectra of diatomic molecules; electronic spectra; IR and Raman activities–selection rules; basic principles of magnetic resonance; Chemical thermodynamics: Laws, state and path functions and their applications; thermodynamic description of various types of processes; Maxwell's relations; spontaneity and equilibria; temperature and pressure dependence of thermodynamic quantities; Le Chatelier principle; elementary description of phase transitions; phase equilibria and phase rule; thermodynamics of ideal and non-ideal gases, and solutions; Statistical thermodynamics: Boltzmann distribution; kinetic theory of gases; partition functions and their relation to thermodynamic quantities –calculations for model systems; Electrochemistry: Nernst equation, redox systems, electrochemical cells; Debye-Huckel theory; electrolytic conductance –Kohlrausch's law and its applications; ionic equilibria; conductometric and potentiometric titrations; Chemical kinetics: Empirical rate laws and temperature dependence; complex reactions; steady state approximation; determination of reaction mechanisms; collision and transition state theories of rate constants; unimolecular reactions; enzyme kinetics; salt effects; homogeneous catalysis; photochemical reactions; Colloids and surfaces: Stability and properties of colloids; isotherms and surface area; heterogeneous catalysis; Solid state: Crystal structures; Bragg's law and applications; band structure of solids; Polymer chemistry: Molar masses; kinetics of polymerization; Data analysis: Mean and standard deviation; absolute and relative errors; linear regression; co-variance and correlation coefficient.

Organic Chemistry: IUPAC nomenclature of organic molecules including regio-and stereoisomers; Principles of stereochemistry: Configurational and conformational isomerism in acyclic and cyclic compounds; stereogenicity,stereoselectivity, enantioselectivity, diastereoselectivity and asymmetric induction; Aromaticity: Benzenoid and non-benzenoid compounds–generation and reactions; Organic reactive intermediates: Generation, stability and reactivity of carbocations, carbanions, free radicals, carbenes, benzynes and nitrenes; Organic reaction mechanisms involving addition, elimination and substitution reactions with electrophilic, nucleophilic and radical species. Determination of reaction pathways; Common named reactions and rearrangements –applications in organic synthesis; Organic transformations and reagents: Functional group interconversion including oxidations and reductions; common catalysts and reagents (organic, inorganic, organometallic and enzymatic). Chemo, regio and stereoselective transformations; Concepts in organic synthesis: Retrosynthesis, disconnection, synthons, linear and convergent synthesis, umpolung of reactivity and protecting groups; Asymmetric synthesis: Chiral auxiliaries, methods of asymmetric induction –substrate, reagent and catalyst controlled reactions; determination of enantiomeric and diastereomericexcess; enantio-discrimination. Resolution–optical and kinetic; Pericyclic reactions –electrocyclisation, cycloaddition, sigmatropic rearrangements and other related concerted reactions. Principles and applications of photochemical reactions in organic chemistry; Synthesis and reactivity of common heterocyclic compounds containing one or two heteroatoms (O, N, S); Chemistry of natural products: Carbohydrates, proteins and peptides, fatty acids, nucleic acids, terpenes, steroids and alkaloids. Biogenesis of terpenoids and alkaloids; Structure determination of organic compounds by IR, UV-Vis, ^{1}H & ^{13}C NMR and Mass spectroscopic techniques.

Interdisciplinary topics: Chemistry in nano-science and technology; Catalysis and green chemistry; Medicinal chemistry; Supramolecular chemistry; Environmental chemistry

Ph.D. (Computer Science and Engineering)

Marks: 50 (50 questions)

Programming Concepts: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps.

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, NP completeness. Distributed Computing, Introduction to Grid and Cloud Computing, Issues of Grid and Cloud Computing.

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential circuits; Number representation and computer arithmetic (fixed and floating point).

Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage.

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching.

Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security.

Databases: ER-model, Relational models, Database design (integrity constraints, normal forms), Query languages (SQL), Transactions and concurrency control. Data Warehouse environment, Architecture of a data warehouse methodology" analysis, design, construction and administration, Extracting models and patterns from large databases, data mining techniques, regression, clustering, summarization, dependency modeling, link analysis, sequencing analysis, mining scientific and business data.

Computer Networks: LAN technologies (Ethernet, Token ring), Flow and error control techniques, Routing algorithms, Congestion control, TCP/UDP and sockets, Basic concepts of hubs, switches, gateways, and routers. Mobile Ad-hoc Networks, Technologies for Ad-hoc Network, Issues in Ad-hoc wireless Networks, IEEE 802.11 Basic Sensor Network Architectural Elements, Applications of Sensor Networks, Comparison with Wireless Networks, Challenges and Hurdles. Architecture of Wireless Sensor Networks (WSNs), Hardware components

Image Processing: Digital Image Fundamentals, image formation, geometric and photometric models, digitization including sampling, quantization and digital image visual details.

Discrete Mathematics: Introduction to Sets and Proposition, Basic principles of counting and probability, Relations and Functions, Mathematical logic Graphs and Planer graphs, Recurrence relations and recursive algorithms, groups, rings and Boolean algebra.

Software Engineering and ERP: Information processing, System development model, ERP concepts and technologies, ERP implementation strategies.

Modern Technologies: IOT, Block chain, Machine learning, Cloud, Fog and Edge computing.

Ph.D. (Electrical and Instrumentation Engineering)

Marks: 25 (25 questions)

Electrical Technology: Introduction to electrical systems, DC and AC circuits, basic electrical components, electromagnetism, AC power, single phase series and parallel circuits, resonance, Comparison between Magnetic and Electric circuits, Electromagnetic Induction, Magnetic Effects of Electric Current, Current carrying conductor in Magnetic field, Coupling Coefficient between two magnetically coupled Circuits, Transformer: principle, construction, working, efficiency, application. D.C. Generator: principle, construction, working, application, D.C. Motor: principle, construction, working, application. Nodal and mesh analysis, network theorems, superposition. Thevenin, Norton, reciprocity, Millman's, Tellegen's theorems, star-delta transformation. Bridges and potentiometer. Wheatstone bridge, measurements of resistance, general form of ac bridge, measurement of self-inductance, capacitance mutual inductance and frequency, sources of error and their minimization potentiometer (AC and DC). Analog instruments, classification of analog instruments principles of operation, operating forces, constructional details of PMMC (Permanent Magnet Moving Coil),

moving iron, electrodynamometer and electrostatic types of instruments, ohmmeters series and shunt type rectifier type instruments, advantages, disadvantages and their comparison, extension of instrument range.

Signals and Systems: Representation of continuous and discrete time signals, shifting and scaling properties, linear time invariant and causal systems, Fourier series representation of continuous and discrete time periodic signals, sampling theorem, Applications of Fourier Transform for continuous and discrete time signals, Laplace Transform and Z transform. R.M.S. value, average value calculation for any general periodic waveform.

Control Theory: Basic control system components, block diagram description, signal flow graphs, reduction of block diagrams, input test signals, properties of systems, linearity, time-invariance, stability, open loop and closed loop (feedback) systems, properties of linear time-invariant (LTI) systems, transient and steady state analysis of LTI system and frequency response. LTI control system analysis, root loci, Routh Hurwitz criterion, polar plots, Bode and Nyquist plots, elements of lead and lag compensations, state space representation of systems, state equations, decomposition, direct, cascade and parallel, solution of state equations, Laplace method, Calay-Hamilton method, diagonalization method and Sylvester method. Digital control, Configuration of the basic Digital control scheme, Principles of signal conversion, Basic Discrete-Time signals, Time-Domain Models for Discrete – Time Systems, Transfer function Model, Stability in the Z-Plane & Jury stability criterion, Sampling as impulse modulation, Sampled spectra & Aliasing, Filtering, Practical aspects of the choice of sampling rate, Principles of Discretization.

Digital electronics and microprocessors: Number systems and arithmetic (binary, Gray, BCD, Excess-3). Boolean algebra, minimization of Boolean functions, logic gates, 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 chips (8255, 8253, 8251, 8279, 8259), introduction to microprocessor 8086 and microcontroller 8051.

Artificial Intelligence and Machine Learning: The concept and importance of AI, Human intelligence vs. machine intelligence, scope, agents, environments, Problem Formulations, Tree and graph structures, State space representation, Expert system architecture, Probability, conditional probability, Bayes Rule, Linear Classification, parametric and non-parametric Methods, Neural Networks.

Section B

[Electrical Engineering]

Marks: 25 (25 questions)

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

Power Systems: Basic power generation concepts; transmission line models and performance; cable performance, insulation; corona and radio interference; distribution systems; per-unit quantities; bus impedance and admittance matrices; load flow; voltage control; power factor correction; economic operation; symmetrical components; fault analysis; principles of over- current, differential and distance protection; solid state relays and digital protection; circuit breakers; system stability concepts, swing curves and equal area criterion, HVDC transmission and FACTS concepts.

Power Electronics and Drives: Power diode, transistor, thyristor, triac, GTO, MOSFET and IGBTs - static characteristics and principles of operation; triggering circuits; phase control rectifiers; bridge converters - fully controlled and half controlled; principle, types and performance characteristics of chopper and inverter; basis concepts of adjustable speed dc and ac drives.

Or

[Instrumentation Engineering]

Marks: 25 (25 questions)

Electronics Principles: Characteristics and equivalent circuits (large and small signal) of diodes (pn junction, zener, schottky, varactor), BJT, JFETs, UJT, and MOSFET; clipping, clamping, rectifier; biasing and bias stability of transistor and FET amplifiers, single and multistage coupling, differential, operational, feedback and power. Analysis of amplifiers, frequency response of amplifiers. op-amp circuits, filters, sinusoidal oscillators, criterion of oscillation, function generators and wave-shaping circuits, power supplies, display units.

Sensors and Industrial Instrumentation: Resistive, capacitive, inductive, piezoelectric, Hall effect sensors and associated signal conditioning circuits; transducers for industrial instrumentation: displacement (linear and angular), velocity, acceleration, force, torque, vibration, shock, pressure (including low pressure), flow (variable head, variable area, electromagnetic, ultrasonic, turbine and open channel flow meters) temperature (thermocouple, bolometer, RTD (3/4 wire), thermistor, pyrometer and semiconductor); liquid level, pH, conductivity and viscosity measurement. 4-20 mA two-wire transmitter.

Process Control: Continuous and discontinuous controller modes, proportional, integral and derivative control mode and composite controller modes, PI, PD, and PID, criterions and method for the tuning of controllers pneumatic and hydraulic controller's implementation, single and composite modes of controllers, Cascade and feed forward controllers, split range controllers, ratio controls, single loop, multi loop and self-tuning controllers, Set point control (SPC), Direct digital control (DDC), control valve classification and types, selection criteria for control valves.

Biomedical Instrumentation: The body as a control system, the nature of bioelectricity, the origin of biopotentials, Electro conduction system of the heart, the ECG Waveform, Neuron potential, muscle potential, electrodes for biophysical sensing, skin contact-impedance, electrodes for EEG, EMG and ECG, electrical conductivity of electrode jellies and creams, EEG, EMG and ECG measuring equipments, components of a biotelemetry system, implantable units, applications of telemetry system in patient care, introduction to telemedicine.

Ph.D. (Electronics and Communication Engineering)

Marks: 50 (50 questions)

Electronic Devices and Circuits: Semiconductor physics, diffusion current, drift current, mobility, and resistivity. Generation and recombination of carriers; p-n junction diode, Zener diode, tunnel diode, BJT, JFET, MOS capacitor, MOSFET, LED, p-i-n and avalanche photo diode, Basics of LASERs. Device technology: integrated circuits fabrication process, oxidation, diffusion, ion implantation, photolithography. Small Signal Equivalent circuits of diodes, BJTs, MOSFETs and analog CMOS. Simple diode circuits, clipping, clamping, rectifier. Biasing and bias stability of transistor and FET amplifiers. Amplifiers: single and multi-stage, differential and operational, feedback, and power. Frequency response of amplifiers. Simple op-amp circuits. Filters. Sinusoidal oscillators; criterion for oscillation; single-transistor and op-amp configurations. Function generators and wave-shaping circuits, 555 Timers. Power supplies.

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

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

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

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

Electromagnetics, Microwaves and optical fibers: Elements of vector calculus: divergence and curl; Gauss' and Stokes' theorems, Maxwell's equations: differential and integral forms. Wave equation, Poynting vector. Plane waves: propagation through various media; reflection and refraction; phase and group velocity; skin depth. Transmission lines: characteristic impedance; impedance transformation; Smith chart; impedance matching; S parameters, pulse excitation. Waveguides: modes in rectangular waveguides; boundary conditions; cut-off frequencies; dispersion relations. Strip line structures, basics of Antennas: Dipole antennas, antenna parameters, microwave components and circuits. Basics of propagation in dielectric waveguide, basics of optical fibers and optical fiber waveguides: total internal reflection, acceptance angle, numerical aperture, mode, step index and graded index fiber. Basic of optical source, optical detector and non-linear optics.

Ph.D. (English)

Marks: 50 (50 questions)

Literary Critical Theory: Main features and major exponents/works: New Criticism, Stylistics, Structuralism, Deconstruction, Discourse Analysis, Feminism, Post Colonialism, Postmodernism

Study of Language: Study of Language, Speech Mechanism, Vowels, Consonants, ELT

Indian English Literature: Nissim Ezekiel, Kamala Das, A.K. Ramanujan, Mulk Raj Anand, Raja Rao, R.K. Narayan, Bhabani Bhattacharya, Manohar Magonkar, Anita Desai, Arun Joshi, Nayantara Sehgal, Shashi Deshpande, Shobha De, Amitav Ghosh, Kiran Desai, Githa, Hariharan, Girish Karnad, Mahesh Dattani, Vijay Tendulkar, Nirad C. Chaudhary, Khushwant Singh

Drama: British Drama, Greek Drama, Shakespearean Drama, Jacobean Drama, Restoration Drama, Theatre of the Absurd, American Drama, African American Theatre

Poetry: Chaucer, Metaphysical Poetry, Neo Classical Poetry, Romantic Poetry, Victorian Poetry, Post Modernist Poetry, American Poetry.

Fiction: Women Novelists, Victorian Novelists, Early 20th Century Novelists, English Novelists of Post 1950's, American Novelists

Diasporic Literature: V.S. Naipaul, Salman Rushdie, Bharati Mukherjee, Vikram Seth, Rohinton Mistri

Post Colonial Literature: Chinua Achebe, Wole Soyinka, Nadine Gordimer, Michael Ondaatje, Margaret Atwood

Ph.D. (Food Engineering and Technology)

Marks: 50 (50 questions)

Food Analysis: Texture analysis of foods, Microscopic techniques in food analysis (light microscopy, SEM, TEM, XRD, particle size analysis, image analysis etc.), Thermal methods in food analysis (Differential scanning colorimetry and others), Chromatographic methods in food analysis and separation, Enzymatic methods of food analysis, application of biosensors in food analysis.

Food Quality and Management: Quality attributes- physical, chemical, nutritional, microbial, and sensory; their measurement and evaluation; Total Quality Management; GMP/GHP; GLP, GAP; Sanitary and hygienic practices; HACCP; Indian & International quality systems and standards like Food Safety and Standards Act, 2006, ISO and Food Codex.

Food Engineering: Engineering properties of foods, steady state and unsteady state heat transfer, Mass transfer, Death rate kinetics, thermal process calculations, heat and. mass balance in single effect and multiple effect evaporator, methods to improve steam economy, Drying Rates, theories of drying, Freezing curves, freezing time calculations, membrane separation techniques, centrifugation and fluidization, viscometry and food rheology.

Food Process Technology: Mechanism and application of High Pressure processing, Ultrasonic processing, Microwave and radio frequency processing high intensity light, pulse electric field, ohmic heating, IR heating, inductive heating and hurdle technology in food processing and preservation.

Food Process Equipment Design: Basic Scientific and Engineering principles of equipment design, Riveted and welded joints, corrosion mechanism and corrosion control, Design of vessels and storage tanks.

Bioprocess Engineering: Fundamentals of growth kinetics, Media sterilization, Air Sterilization, Bioreactor fermenter, Aeration and Agitation. Bioprocess instrumentation, Bioprocess modeling and simulation and its application in industrial fermentation, scale-up of fermentation processes.

Ph.D. (Management)

Marks: 50 (50 questions)

Unit-1: Managerial Economics-Demand Analysis, Production Function, Cost-Output relation, Market Structures, Pricing Theories, Capital Budgeting; The concept and significance of organizational behavior, Personality-Perception-Values-Attitude-Learning & Motivation; Communication-Leadership-Managing Change, Organizational Development, Concepts & perspectives on HRM HRP- Objectives, Process & Techniques, Job Analysis-Selection-Induction-Training & Development, Performance Appraisal & Evaluation, Industrial Relations & Trade Unions, Dispute resolution and Grievance management

Unit-2: Financial Management-Nature & Scope, Capital Budgeting Decisions, Capital Structure & Cost of capital Dividend policy-Determinants, Mergers & Acquisitions, Marketing Information System & marketing research, Demand measurement & Forecasting, Market Segmentation-Targeting & positioning, Product life cycle, Pricing methods & strategies, Marketing Management, Marketing Mix, Customer Relation shift Management, Role & Scope of Production management, Facility Locations- Layout Managing & Analysis, Production Scheduling, Statistical Quality Control

Unit-3: Probability Theory, Probability, Distribution-Binomial, Poisson, Normal, Correlation & Regression Analysis, Sampling Theory & Sampling Distribution, Tests of Hypothesis-t, Z,F, chi-square tests, Concepts of corporate streategy-Ans off's growth vector, BCG Model, Porters generic strategies, Competitive strategy & Corporate Strategy, Competitive advantage of nations, RTP & WTO, Innovation & Entrepreneurship, Concept of Govt. Policy for promotion of MSME (Micro, Small, Medium) Enterprises), Detailed Business Plan Preparation –Managing small industries –sickness in small enterprises

Unit-4: Ethics & Management System, Value based organizations, Ethical pressure on individual in organization Environmental ethics, Social responsibilities of Business, Corporate Governance, Research-Meaning, types, objectives, process survey based research-types of survey-specific-periodic & transaction drivers, Identification of research problem analysis of research problem, Categorization & sampling, Planning a survey Project-resources budget-schedule, Preparation of Questionnaire,-Data Collection analysis & compilation of Survey report.

Ph.D. (Mathematics)

Marks: 50 (50 questions)

Linear Algebra: Finite dimensional vector spaces; Linear transformations and their matrix representations, rank; systems of linear equations, eigen values and eigen vectors, minimal polynomial, Cayley-Hamilton theorem, diagonalization, Hermitian, Skew-Hermitian and unitary matrices; Finite dimensional inner product spaces, Gram-Schmidt orthonormalization process, self-adjoint operators.

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

Real Analysis: Sequences and series of functions, uniform convergence, power series, Fourier series, functions of several variables, maxima, minima; Riemann integration, multiple integrals, line, surface and volume integrals, theorems of Green, Stokes and Gauss; metric spaces, completeness, Weierstrass approximation theorem, compactness; Lebesgue measure, measurable functions; Lebesgue integral, Fatou's lemma, dominated convergence theorem.

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

Algebra: Fundamental theorem of arithmetic, divisibility in Z, congruence, Chinese Remainder Theorem, Euler's ϕ function, primitive roots.Normal subgroups and homomorphism theorems, automorphisms; Group actions,Sylow's theorems and their applications; Euclidean domains, Principle ideal domainsand unique factorization domains. Prime ideals and maximal ideals in commutative rings; Fields, finite fields.

Functional Analysis: Banach spaces, Hahn-Banach extension theorem, open mapping and closed graph theorems, principle of uniform boundedness; Hilbert spaces, orthonormal bases, Riesz representation theorem, bounded linear operators.

Numerical Analysis: Numerical solution of algebraic and transcendental equations: bisection, secant method, Newton-Raphson method, fixed point iteration; interpolation: error of polynomial interpolation, Lagrange, Newton interpolations; numerical differentiation; numerical integration: Trapezoidal and Simpson rules, Gauss Legendre quadrature, method of undetermined parameters; least square polynomial approximation; numerical solution of systems of linear equations: direct methods (Gauss elimination, LU decomposition); iterative methods (Jacobi and Gauss-Seidel); matrix eigenvalue problems: power method, numerical solution of ordinary differential equations: initial value problems: Taylor series methods, Euler's method, Runge-Kutta methods.

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

Mechanics: Generalized coordinates, Lagrange's equations, Hamilton's canonical equations,Hamilton's Principle and principle of least action, two-dimensional motion of rigid bodies, Euler's dynamical equations for the motion of rigid body about an axis.

Topology: Basic concepts of topology, product topology, connectedness, countability and separation axioms, Urysohn's Lemma. Compactness.

Probability and Statistics: Probability space, conditional probability, Bayes theorem, independence, Random variables, joint and conditional distributions, standard probability distributions and their properties, expectation, conditional expectation, moments, sampling distributions, Testing of hypotheses, standard parametric test based on *normal* χ^2*,t, F*-distributions.

Linear programming: Linear programming problem and its formulation, convex sets and their properties, graphical method, basic feasible solution, simplex method, big-M and two phase methods; infeasible and unbounded LPP's, alternate optima; Dual problem and duality theorems, Balanced and unbalanced transportation problems, u -u method for solving transportation problems; Hungarian method for solving assignment problems.

Ph.D. (Mechanical Engineering)

Marks: 50 (50 questions)

Engineering Materials: Structure and properties of engineering materials and their applications; effect of strain, strain rate and temperature on mechanical properties of metals and alloys; heat treatment of metals and alloys, its influence on mechanical properties.

Engineering Mechanics: Free body diagrams and equilibrium; trusses and frames; virtual work; kinematics and dynamics of particles and of rigid bodies in plane motion, including impulse and momentum (linear and angular) and energy formulations; impact.

Strength of Materials: Stress and strain, stress-strain relationship and elastic constants, Mohr's circle for plane stress and plane strain, thin cylinders; shear force and bending moment diagrams; bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; strain energy methods; thermal stresses.

Theory of Machines and Design: Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of slider-crank mechanism; gear trains; flywheels.

Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram; *principles* of the design of machine elements such as bolted, riveted and welded joints, shafts, spur gears, rolling and sliding contact bearings, brakes and clutches.

Vibrations: Free and forced vibration of single Degree of freedom systems; effect of damping; vibration isolation; resonance, critical speeds of shafts.

Thermal Engineering: Fluid mechanics - fluid statics, Bernoulli's equation, flow through pipes, equations of continuity and momentum; thermodynamics - zeroth, first and second law of thermodynamics, thermodynamic system and processes, calculation of work and heat for systems and control volumes; air standard cycles; basics of internal combustion engines and steam turbines; heat transfer - fundamentals of conduction, convection and radiation, heat exchangers.

Metal Casting: Casting processes - types and applications; patterns - types and materials; allowances; moulds and cores - materials, making, and testing; casting techniques of cast iron, steels and nonferrous metals and alloys; solidification; design of casting, gating and risering; casting inspection, defects and remedies.

Metal Forming: Stress-strain relations in elastic and plastic deformation; concept of flow stress, deformation mechanisms; hot and cold working - forging, rolling, extrusion, wire and tube drawing; sheet metal working Processes, analysis of rolling, forging, extrusion and wire /rod drawing; metal working defects.

Advanced Welding Processes: Welding processes - manual metal arc, MIG, TIG, plasma arc, submerged arc, electro slag, thermit, resistance, forge, friction, and explosive welding, inspection of welded joints, defects and remedies; - ultrasonic, electron beam, laser beam; thermal cutting.

Machining and Machine Tool Operations: Basic machine tools; machining processes, mechanics of machining ,Merchant's analysis; selection of machining parameters; tool materials, tool wear and tool life, thermal aspects of machining, cutting fluids, machinability; principles and applications of nontraditional machining processes - USM, AJM, WJM, EDM and Wire cut EDM, LBM, EBM, PAM, CHM, ECM.

Metrology and Inspection: Limits, fits, and tolerances, interchangeability, selective assembly; linear and angular measurements by mechanical and optical methods, comparators; design of limit gauges; interferometry; measurement of straightness, flatness, roundness, squareness and symmetry; surface finish measurement; inspection of screw threads and gears; alignment testing of machine tools.

Computer Integrated Manufacturing: Basic concepts of CAD, CAM, CAPP, cellular manufacturing, NC, CNC, DNC, Robotics, FMS, and CIM. Principles of good product design, tolerance design; quality and cost considerations; product life cycle; concurrent engineering.

Facility Design: Facility location factors and evaluation of alternate locations; types of plant layout and their evaluation; computer aided layout design techniques; assembly line balancing; materials handling systems.

Production Planning and Inventory Control: Forecasting techniques ,aggregate production planning; MRP and MRP-II; order control and flow control; routing, scheduling and priority dispatching; push and pull production systems, concept of JIT manufacturing system; logistics, distribution, and supply chain management; inventory models

Operations Research: Linear programming, simplex method, duality and sensitivity analysis; transportation and assignment models; network flow models, constrained optimization and Lagrange multipliers; simple queuing models; dynamic programming; simulation - manufacturing applications; PERT and CPM,

Quality Management: Quality - concept and costs, quality circles, quality assurance; statistical quality control, acceptance sampling, zero defects, six sigma; total quality management; ISO 9000; design of experiments - Taguchi method.

Reliability and Maintenance: Reliability, availability and maintainability; distribution of failure and repair times; determination of MTBF and MTTR, reliability models; system reliability determination; preventive maintenance and replacement, total productive maintenance - concept and applications.

Ph.D. (Physics)

Marks: 50 (50 questions)

- **Mathematical Methods of Physics**: Dimensional analysis; Vector algebra and vector calculus; Linear algebra, matrices, eigenvalue problems; Linear differential equations; Special functions (Hermite, Bessel and Legendre); Fourier series, Fourier and Laplace transforms; Elements of complex analysis, poles, residues. Elementary ideas about tensors; Introductory group

theory, SU (2), O (3); Elements of computational techniques: roots of functions, interpolation, extrapolation, Finite difference methods.

- **Classical Mechanics: Newton's laws**: Phase space dynamics, stability analysis; Central-force motion; Two-body collisions, scattering in laboratory and centre-of-mass frames; Rigid body dynamics, moment of inertia tensor, non-inertial frames and pseudo forces; Variational principle, Lagrangian and Hamiltonian formalisms and equations of motion; Poisson brackets and canonical transformations; Symmetry, invariance and conservation laws, cyclic coordinates; Periodic motion, small oscillations and normal modes.
- **Electromagnetic Theory: Electrostatics**: Gauss' Law and its applications; Laplace and Poisson equations, boundary value problems; Magneto statics: Biot-Savart law, Ampere's theorem, electromagnetic induction; Maxwell's equations in free space and linear isotropic media; boundary conditions on fields at interfaces; Scalar and vector potentials; Gauge invariance; Electromagnetic waves in free space, dielectrics, and conductors; Reflection and refraction, polarization, Fresnel's Law.
- **Quantum Mechanics**: Wave-particle duality; Wave functions in coordinate and momentum representations; Commutators and Heisenberg's uncertainty principle; Matrix representation; Dirac's bra and ket notation; Schrodinger equation (time-dependent and time-independent); Eigenvalue problems such as particle-in-a-box, harmonic oscillator, etc.; Tunneling through a barrier; Motion in a central potential; Orbital angular momentum, Angular momentum algebra, spin; Addition of angular momenta; Hydrogen atom, spin-orbit coupling, fine structure; Time-independent perturbation theory and applications; Variational method; WKB approximation; Time dependent perturbation theory and Fermi's Golden Rule; Selection rules; Semi-classical theory of radiation; Elementary theory of scattering, phase shifts, partial waves, Born approximation; Identical particles, Pauli's exclusion principle, spin-statistics connection; Relativistic quantum mechanics: Klein Gordon and Dirac equations.
- **Thermodynamic and Statistical Physics**: Laws of thermodynamics and their consequences; Thermodynamic potentials, Maxwell relations; Chemical potential, phase equilibria; Phase space, micro- and macrostates; Microcanonical, canonical and grand-canonical ensembles and partition functions; Free Energy and connection with thermodynamic quantities; First- and second-order phase transitions; Classical and quantum statistics, ideal Fermi and Bose gases; Principle of detailed balance; Blackbody radiation and Planck's distribution law; Bose-Einstein condensation; Random walk and Brownian motion; Introduction to non-equilibrium processes; Diffusion equation.
- **Electronics: Semiconductor device physics**, including diodes, junctions, transistors, field effect devices, device characteristics, frequency dependence and applications; Optoelectronic devices, including solar cells, photo detectors, and LEDs; Operational amplifiers and their applications; Digital techniques and applications (registers, counters, comparators and similar circuits); A/D and D/A converters; Microprocessor and microcontroller basics.
- **Atomic & Molecular Physics**: Quantum states of an electron in an atom; Electron spin; Stern-Gerlach experiment; Spectrum of Hydrogen, helium and alkali atoms; Relativistic corrections for energy levels of hydrogen; Hyperfine structure and isotopic shift; width of spectral lines; LS & JJ coupling; Zeeman, Paschen Back & Stark effect; X-ray spectroscopy; Electron spin resonance, chemical shift; Rotational, vibrational, electronic, and Raman spectra of diatomic molecules; Frank – Condon principle and selection rules; Spontaneous and stimulated emission, Einstein A & B coefficients; Lasers, optical pumping, population inversion, rate equation; Modes of resonators and coherence length.
- **Condensed Matter Physics**: Bravais lattices; Reciprocal lattice, diffraction and the structure factor; Bonding of solids; Elastic properties, phonons, lattice specific heat; Free electron theory and electronic specific heat; Response and relaxation phenomena; Drude model of electrical and thermal conductivity; Hall effect and thermoelectric power; Diamagnetism, paramagnetism, and ferromagnetism; Electron motion in a periodic potential, band theory of metals, insulators and semiconductors; Superconductivity, type – I and type - II superconductors.
- **Nuclear and Particle Physics**: Basic nuclear properties: size, shape, charge distribution, spin and parity; Binding energy, semi-empirical mass formula; Liquid drop model; Fission and fusion; Nature of the nuclear force, form of nucleon-nucleon potential; Charge-independence and charge-symmetry of nuclear forces; Isospin; Evidence of shell structure, single- particle shell model, its validity and limitations; Rotational spectra; Elementary ideas of alpha, beta and gamma decays and their selection rules; compound nuclei and direct reactions; Classification of fundamental forces; Elementary particles (quarks, baryons, mesons, leptons); Spin and parity assignments, isospin, strangeness; Gell-Mann-Nishijima formula; C, P, and T invariance and applications of symmetry arguments to particle reactions, parity non-conservation in weak interaction; Relativistic kinematics.

Reference Books:

- ✓ "Mathematical Methods for Physicists" by George B. Arfken and Hans J. Weber
- ✓ "Advanced Engineering Mathematics" by Erwin Kreyszig
- ✓ "Classical Mechanics" by Herbert Goldstein, Charles P. Poole, and John L. Safko

- ✓ "Analytical Mechanics" by Grant R. Fowles and George L. Cassiday
- ✓ "Introduction to Electrodynamics" by David J. Griffiths
- ✓ "Classical Electrodynamics" by John David Jackson
- ✓ "Principles of Quantum Mechanics" by R. Shankar
- ✓ "Quantum Mechanics: Concepts and Applications" by Nouredine Zettili
- ✓ "Thermal Physics" by Charles Kittel and Herbert Kroemer
- ✓ "Statistical Mechanics" by R.K. Pathria and Paul D. Beale
- ✓ "Microelectronic Circuits" by Adel S. Sedra and Kenneth C. Smith
- ✓ "Solid State Electronic Devices" by Ben G. Streetman and Sanjay Kumar Banerjee
- ✓ "Atomic Physics" by Max Born
- ✓ "Molecular Quantum Mechanics" by Peter W. Atkins and Ronald S. Friedman
- ✓ "Solid State Physics" by Neil W. Ashcroft and N. David Mermin
- ✓ "Introduction to Solid State Physics" by Charles Kittel
- ✓ "Introduction to Nuclear and Particle Physics" by A. Das and T. Ferbel
- ✓ "Nuclear Physics: Principles and Applications" by John Lilley.

APPENDIX - I

OBC CERTIFICATE FORMAT
(ISSUED ON OR AFTER 01.04.2026)

(As per OM No. 36033/1/2013-Estt.(Res) dated 13th September,2017)

FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR ADMISSION IN THE INSTITUTES UNDER GOVERNMENT OF INDIA

This is to certify that Shri / Smt. / Kum. _____Son / Daughter of Shri / Smt. _____ of Village/Town _____ District/Division _____ in the _____ State belongs to the _____Community which is recognized as a backward class under:

(i) Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated 13/09/93.
(ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.
(iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.
(iv) Resolution No. 12011/96/94-BCC dated 9/03/96.
(v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.
(vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
(vii) Resolution No. 12011/99/94-BCC dated 11/12/97.
(viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
(ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
(x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
(xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.
(xii) Resolution No. 12015/9/2000-BCC dated 06/09/2001.
(xiii) Resolution No. 12011/1/2001-BCC dated 19/06/2003.
(xiv) Resolution No. 12011/4/2002-BCC dated 13/01/2004.
(xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.
(xvi) Resolution no. 12011/14/2004-BCC dated 12/03/2007 published in the Gazzette of India Extraordinay Part I Section I No.210 dated 12.03.2007.
(xvii) Resolution No. 12015/2/2007-BCC dated 18/08/2010
(xviii) Resolution No. 12015/13/2010-BCC dated 08/12/2011

Shri / Smt. / Kum. _____ and / or his family ordinarily reside(s) in the _____ District / Division of _____ State. This is also to certify that he/she does not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of the Schedule to the Government of India, Department of Personnel & Training O.M. No. 36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OM No. 36033/3/2004 Estt.(Res.) dated 09/03/2004.

Dated: _____

District Magistrate / Deputy Commissioner / Competent Authority
Seal

NOTE:

(a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
(b) The authorities competent to issue Caste Certificates are indicated below:
(i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).
(ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
(iii) Revenue Officer not below the rank of Tehsildar' and Sub-Divisional Officer of the area where the candidate and / or his family resides.

APPENDIX - II

(ISSUED ON OR AFTER 01.04.2026)

Government of _____
(Name and Address of the authority issuing the certificate)
INCOME & ASSET CERTIFICATE TO BE PRODUCED BY ECONOMICALLY WEAKER SECTIONS

Certificate No._____ Date:_____

This is to certify that Shri/Smt./Kumari_____son/daughter/wife of Sh._____ permanent resident of _____ Village/Street _____ Post office_____ District in the State/Union Territory _____PIN code_____ whose photograph is attested below belongs to Economically Weaker Sections. Since the gross annual income* of his/her family** is below Rs.8 Lakh (Rupees Eight Lakh only) for the financial year_____. His/her family does not own or possess any of the following assets***:

i. 5 acres of agricultural land and above;
ii. Residential flat of 1000 sq.ft and above;
iii. Residential plot of 100 sq.yards and above in notified municipalities;
iv. Residential plot of 200 sq.yards and above in areas other than notified municipalities.

Shri/Smt./_____ belongs to the _____caste which is not recognized as a Scheduled Caste, Scheduled Tribe and Other Backward Classes (Central List).

Recent Passport size attested photograph of the applicant

Signature with seal of office_____
Name_____
Designation_____

* Income covered all sources i.e. salary, agriculture, business, profession etc.
** The term "Family" for this purpose include the person, who seeks benefit of reservation, his/her parents and siblings below the age of 18 years and also his/her spouse and children below the age of 18 years.
*** The property held by a "Family" in different locations or different places/cities have been clubbed while applying the land or property holding test to determine EWS status.

The authorities competent to issue EWS Certificates are indicated below:

(i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of Ist Class Stipendiary Magistrate).
(ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
(iii) Revenue Officer not below the rank of Tehsildar' and sub-Divisional Officer of the area where the candidate and / or his family resides.

APPENDIX - III

MEDICAL CERTIFICATE
(To be issued by a Registered Medical Practitioner)

GENERAL EXPECTATIONS

Candidates should have good general physique.

1	Name of the candidate:				
2	Identification Mark (a mole, scar or birthmark), if any				
3	Major illness/operation, if any (specify nature of illness/operation)				
4	Height in cm:	Weight in kg:		Blood Group:	
7	Hearing				
8	Vision with or without glasses:	Right Eye	Left Eye	Colour Blindness	Uniocular vision
9	Any other disease/defects:				

Certificate of Medical Fitness (Please Tick)

☐ The candidate fulfils the prescribed standards of physical fitness, medical fitness and is fit for admission to Engineering/Architecture/ Pharmaceutics/ Science Course

☐ The candidate does not fulfill the prescribed standard of physical fitness/medical fitness and is unfit/temporarily unfit for admission due to following defects:

_____	_____	_____	_____
Name of the Doctor	Signature	Registration number	Seal

APPENDIX –IV

UNDERTAKING FOR QUALIFICATION ELIGIBILITY CERTIFICATES

FORMAT FOR SELF-DECLARATION AND UNDERTAKING

IN LIEU OF QUALIFICATION ELIGIBILITY CERTIFICATES

FOR ICD/B.E. (LATERAL ENTRY-DIRECT)/M.TECH./M.SC./Ph.D.

I_____ Son/Daughter of _____ bearing Regn.No./Application No. _____, declare that I will upload qualification eligibility certificates latest by 30th September, 2026.

I understand that inability to produce the same up to 30th September, 2026 will lead to the cancellation of my admission.

Signature of Father/Mother	Signature of Applicant
Name:	Name:
Date:	Date:

APPENDIX - V

FORM OBC-NCL UNDERTAKING
FORMAT FOR SELF DECLARATION AND UNDERTAKING
TO BE PRODUCED BY OTHER BACKWARD CLASSES – NON CREAMY LAYERS CANDIDATES
IN LIEU OF OBC – NCL CERTIFICATE

I understand that as per the new guidelines from the Ministry of Personnel, Public Grievances and Pensions, GoI, I am required to submit OBC-NCL certificate issued on or after April 1, 2026.

I_____ Son/ Daughter of _____ belong to the _____ Caste in _____ state, which is recognized as an Other Backward Classes- Non Creamy Layers (Central List [http://www.ncbc.nic.in]).

I hereby declare that I will upload the OBC-NCL certificate (issued on or after April 1, 2026) latest by 04 May, 2026 for ICD/BE Lateral Entry, M.Sc/ M.Tech and 20 July,2026 for Ph. D.

I understand that inability to produce the same by the above mentioned date will lead to the withdrawal of OBC-NCL benefit.

Signature of Father/Mother	Signature of Applicant
Name:	Name:
Date:	Date:

APPENDIX - VI

FORM GEN-EWS UNDERTAKING

FORMAT FOR SELF DECLARATION AND UNDERTAKING
TO BE PRODUCED BY GENERAL – ECONOMICALLY WEAKER SECTION CANDIDATES
IN LIEU OF GEN-EWS CERTIFICATE

I understand that as per the new guidelines from the Ministry of Personnel, Public Grievances and Pensions, GoI, I am required to submit GEN-EWS certificate issued on or after April 1, 2026.

I_____ Son/ Daughter of _____

belong to the _____Caste in _____ state which is not recognized as a Schedule Caste, Schedule Tribe and Other Backward Classes (Central List [http://www.ncbc.nic.in]).

I hereby declare that I will upload the GEN-EWS certificate (issued on/after April 1, 2026) latest by 04 May, 2026 for ICD/BE Lateral Entry, M.Sc/ M.Tech and 20 July,2026 for Ph. D.

I understand that inability to produce the same by the above mentioned date will lead to the withdrawal of GEN-EWS benefit.

Signature of Father/Mother	Signature of Applicant
Name:	Name:
Date:	Date:

APPENDIX - VII

FORM INCOME CERTIFICATE UNDERTAKING

FORMAT FOR SELF DECLARATION AND UNDERTAKING TO BE PRODUCED BY SC/ST CANDIDATES IN LEIU OF AVAILING POST MATRIC SCHOLARSHIP (PMS) SCHEME

I understand that as per the new guidelines from the Govt. of Punjab (Department of Social Justice, Empowerment and Minorities), income slab of parents (Father & Mother), I am required to submit Income certificate issued on or after April 1, 2026.

I_____ Son/ Daughter of _____

belong to the _____Caste in Punjab State, which is recognized as a Schedule Caste/Tribe, declare that I will upload the Income certificate (issued on or after April 1, 2026) latest by 04 May, 2026 for ICD/BE Lateral Entry, M.Sc/ M.Tech.

I understand that inability to produce the same by the above mentioned date will lead to the withdrawal of PMS Scheme benefit.

Signature of Father/Mother	Signature of Applicant
Name:	Name:
Date:	Date:

APPENDIX - VIII

Format of NOC: On the Letterhead of Organization

Candidate shall obtain a "No Objection Certificate" from the appropriate authority in the organization where the candidate is employed, clearly stating that:

a. The candidate is permitted to pursue studies on a part-time basis.

b. His/her official duties permit him/her to devote sufficient time for research.

c. If required, he/she will be relieved from the duty to complete the course work.

suitable candidates are not found. The Institute reserves the right to modify any information above at any stage.