

PhD Admission – Test & Interview

Test Pattern

- All candidates, except those granted waiver, have to appear for the written test.
- The written test will consist of Multiple Choice questions. The test will have 20 questions to be answered in 1 hour. For every correct answer, the candidate will receive +4 marks, while for every incorrect answer the candidate will receive a negative 1 mark.
- The marks obtained in the test would be used for shortlisting the candidates for the interview.
- The candidates will be administered the appropriate written test based on the preference given in the application form.

Interview

- Applicants will be interviewed based on the area – CSE/ECE/PHY/MAT attempted on the written test.
- They may also be asked questions on their undergraduate/postgraduate projects.

Test Syllabus

o Engineering Question Paper

Candidates falling under the *Engineering* category will appear in one of the following two tests: *Computer Science and Engineering (CSE)* or *Electronics and Communication Engineering (ECE)*. This will be based on the choice filled in the application form.

The syllabus is as follows:

- *Mathematics*: A set of 5 questions will be based on Mathematics, the syllabus for which is common to both CSE and ECE tests.
 - o Discrete structures
 - o Calculus
 - o Basic linear algebra
- *Computer Science and Engineering*: For candidates aligned to *Computer Science and Engineering (CSE)* area, the remaining 15 questions will be based on the following 4 areas of undergraduate Computer Science curriculum.
 - o Data structures and Algorithms
 - o Operating Systems
 - o Theory of Computation
 - o Programming

- *Electronics and Communication Engineering*: For candidates aligned to *Electronics and Communication Engineering (ECE)*, the remaining 15 questions will be based on the following 4 areas of undergraduate Electronics and Communication Engineering curriculum.
 - Basic Electrical and Electronic Circuits
 - Analog and Digital Communication
 - Digital Signal Processing

○ Mathematics and Natural Sciences Question Paper

Candidates falling under the *Mathematics and Natural Sciences* category will appear in one of the following two tests: Physics (PHY) or Mathematics (MAT). This will be based on the choice filled in the application form.

The syllabus is as follows:

- *Physics*: The question paper will contain a set of 5 questions on Mathematics and the remaining 15 questions from 4 areas from undergraduate Physics curriculum listed below:
 - *Mathematics*: Discrete structures, Calculus, Basic linear algebra
 - Classical mechanics
 - Electrodynamics
 - Quantum Mechanics
 - Thermodynamics
- *Mathematics*: The question paper will be based on the following 5 areas of BSc/MSc level mathematics curriculum.
 - Real Analysis
 - Complex analysis
 - Abstract algebra
 - Linear algebra
 - Probability