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

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.
  - Discrete structures
  - Calculus
  - 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.
  - Data structures and Algorithms
  - Operating Systems
  - Theory of Computation
  - 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

0 **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