Guidelines and syllabus for the entrance exam (PhD in ICT and allied Engineering disciplines)

- All candidates intending to pursue research in ICT and Allied Engineering disciplines, except those granted waiver, have to appear for the examination.
- The question paper shall consist of two parts. Questions in Part-I will be on Engineering Mathematics. For Part-II, the candidate has to attempt any one of the following subject papers: (a) Computer Science and Engineering (CSE), (b) Electronics and Communication Engineering (ECE).
- The candidates will be administered the appropriate exam based on the preference chosen in the application form.
- The exam will consist of 20 multiple choice questions to be answered in one 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 exam would be used for shortlisting the candidates for the interview.
- During the interview, the questions will be based on the discipline that the candidate appeared for in the entrance exam. Candidates may also be asked questions on their undergraduate/postgraduate projects.
- Syllabus:
  Mathematics: A set of 5 questions will be based on Mathematics, the syllabus for which is common to both CSE and ECE candidates.
  - Discrete Structures
  - Calculus
  - Basic Linear Algebra
  - Basic Probability Theory
  - Basic Computer Programming

  Computer Science and Engineering: For candidates aligned to *Computer Science and Engineering* (CSE) area, the remaining 15 questions will be based on the following five areas of undergraduate Computer Science and Engineering curriculum.
  - Data Structures and Algorithms
  - Operating Systems

- Database Systems
- Computer Networks
- Theory of Computing

Electronics and Communication Engineering: For candidates aligned to *Electronics and Communication Engineering* (ECE) area, the remaining 15 questions will be based on the following five areas of undergraduate Electronics and Communication Engineering curriculum.

- Basic Electrical and Electronic Circuits
- Signals and Systems
- Analog and Digital Communications
- Digital Signal Processing
- Electromagnetic Theory