Instructions for the written test for M.Tech. and Ph.D. are as follows:

- Multiple choice question with negative marking
- Calculators or any other devices (watches, mobile phones, etc.) are not allowed
- Syllabus:

| Aptitude    | Quantitative<br>Aptitude | Data interpretation: data graphs (bar graphs, pie charts, and other graphs representing data), 2- and 3-dimensional plots, maps, and tables Numerical computation and estimation: ratios, percentages, powers, exponents and logarithms, permutations and combinations, and series Mensuration and geometry Elementary statistics and probability. |
|-------------|--------------------------|--|
|             | Analytical<br>Aptitude   | Logic: deduction and induction, Analogy, Numerical relations and reasoning.  |
| Mathematics | Linear Algebra           | Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition.  |
|             | Calculus                 | Limits, continuity and differentiability, Maxima and minima, Mean value theorem, Integration.  |
|             | Probability & Statistics | Random variables, Uniform, normal, exponential, Poisson and binomial distributions. Mean, median, mode and standard deviation. Conditional probability and Bayes theorem.  |
| Programming |                          | Recursion, Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.   |
| DSA         | basic data<br>structures | stacks, queues, linked lists, trees, hash tables;  |
|             | Search algorithms:       | linear search and binary search  |
|             | Sorting algorithms:      | basic sorting algorithms: selection sort, bubble sort and insertion sort; divide and conquer: mergesort, quicksort;  |
|             | Graph theory             | basic graph algorithms: traversals, minimum spanning trees and shortest path   |

- After the written test screening, an interview will be held.