

Syllabus and Scheme for the Post of Junior Laboratory Assistant (Technical)
School of Computing & Electrical Engineering
Intelligent Communication System
Post Code- 010
Advertisement No. IIT Mandi/Recruit./NTS/2025/05 dated 17.12.2025

There will be two-stage examination.

Stage I: Written Examination (Objective type- MCQ)

Stage II: Skill/Trade Test

Syllabus:

1. **Linear algebra:** Matrix Algebra, systems of linear equations, eigenvalues, eigenvectors
2. **Probability and statistics:** Conditional probability, mean, median, mode, standard deviation, random variables, discrete and continuous distributions, Poisson distribution, normal distribution, binomial distribution
3. **Electric circuits:** Ideal voltage and current sources, dependent sources, R, L, C elements; Network solution methods: KCL, KVL, node and mesh analysis; Network Theorems: Thevenin's, Norton's, Superposition and Maximum Power Transfer theorem; Transient response of DC and AC networks, sinusoidal steady-state analysis, resonance, two-port networks
4. **Signals and systems:** Representation of continuous and discrete time signals, shifting and scaling properties, linear time invariant and causal systems, system types, Fourier series and Transform of continuous and discrete time signals, sampling theorem
5. **Analog and digital electronics:** Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: biasing, equivalent circuit and frequency response; oscillators and feedback amplifiers; operational amplifiers: characteristics and applications; VCOs and timers, combinatorial and sequential logic circuits, multiplexers, demultiplexers, Schmitt triggers, sample and hold circuits, A/D and D/A converters.
6. **Electromagnetics:** Coulomb's law, electric field intensity, electric flux density, Gauss's Law, divergence, electric field and potential due to point, line, plane, and spherical charge distributions, effect of dielectric medium, capacitance of simple configurations, Biot-Savart's law, Ampere's law, Curl, Faraday's law

Important Instructions for candidates:

General information about the exam:

- The MCQs have negative marking for wrong answers. The unanswered questions will not be considered for evaluation. (*i.e.*, no marks will be awarded for any question not attempted).
- Only one best-suited answer has to be given for any MCQ. More than one answer will be treated as wrong answer.
- Use of only blue or black ballpoint pen is permitted to answer the questions and fill the form in the exam hall. Use of ink pen/gel pen/pencil/whitener is not permitted.
- Use of calculator, cell phones, log book, periodic table, and any type of electronic device etc., are strictly prohibited.
- Involvement in any malpractices will lead to disqualification
- Any additional instructions given during the selection process must be adhered/complied.

Final Selection:

- Examinations for Stage-I and Stage-II will be conducted for all the candidates or as decided by the selection committee.
- Final selection will be made on the scores obtained in the Stage-I, as the Stage –II is of qualifying nature. But if a candidate fails to qualify in Stage-II, her/his candidature will not be considered further.
- Please note that for consideration in the merit list, a candidate has to secure minimum marks fixed by the selection committee in both exams at Stage-I and Stage-II – failing which institute will not make an offer of appointment even if vacancies go unfilled.