

**Final Syllabus and Scheme for the Post of Junior Laboratory Assistant (Technical) School of  
Computing & Electrical Engineering- Control System  
Post Code- 007**

**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

**Technical:**

**PCB and IC:** Basic PCB design, soldering, IC handling, knowledge of common ICs such as timers, Op-amps, logic ICs, converters, testing and troubleshooting circuits.

**Basic Electronics:** Semiconductors, diodes, BJT, MOSFET, LED, solar cell

**Analog Circuits:** clippers, clampers, rectifiers, amplifiers, Op-amp circuits, Amplifiers.

**Electric Circuits:** KCL, KVL, RL, RC and RLC circuits, and associated components.

**Electronic Measurements:** Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor, Instrument transformers, Digital voltmeters and multi-meters, Phase, Time and Frequency measurement; Oscilloscopes, DSO, regulated power supplies.

**Control Systems:** time-domain response, bode plot, root locus, nyquist plot, lead-lag compensation, PID controller.

**Simulation Tools:** MATLAB control systems toolbox, MATLAB simulink for control systems, PSpice, Multisim, EDA.

**Microcontroller and SBC boards:** Usage of Arduino, ESP family, Raspberry PI.

**General Aptitude**

**Verbal:** Basic English grammar: tenses, articles, adjectives, prepositions, conjunctions, verb-noun agreement, and other parts of speech

**Basic vocabulary:** words, idioms, and phrases in context. Reading and comprehension, Narrative sequencing.

**Quantitative 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 Aptitude**

**Logic:** deduction and induction, Analogy, Numerical relations and reasoning.

**Spatial Aptitude**

Transformation of shapes: translation, rotation, scaling, mirroring, assembling, and grouping paper folding, cutting, and patterns in 2 and 3 dimensions

## **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.