

**Syllabus and Scheme of Written Examination for the Post of Junior Laboratory
Assistant (Technical)
School of Mechanical & Materials Engineering (SMME)
(Mechanical & General Engineering Laboratory)**

Advertisement No. IIT Mandi/Recruit./NTS/2024/03 dated 14.03.2024

There will be two-stage examination.

Stage I: Written Examination (Objective type) (100 MCQ questions)

Stage II: Skill/Trade Test

Syllabus of Stage-I:

- Engineering materials and their mechanical properties and testing methods.
- Basic principles and testing methods for fluid flow, pipe flow and losses, hydraulic machines.
- Machining operations on lathe, drilling, milling, and grinding machines.
- Design of casting patterns, moulds and cores, allowances, moulding sand composition and properties, different types of castings, solidification and cooling, riser & gating design, defects and their remedies.
- Welding, Soldering and Brazing, and their applications in the electronics industry.
- Forging, rolling, extrusion, drawing, sheet metal operations.
- Nonconventional Manufacturing Processes and their applications.
- Machining principles and concepts related to computer numerical control (CNC), programming, and tooling requirements for CNC/CAM machines.
- 3-D printing, Extrusion, Jetting, Design and fabrication processes - data sources, software tools, file formats, model repair and validation, post-processing.

Syllabus of Stage-II:

- Specified product manufacturing by using tools in machine shop, sheet metal shop, foundry shop, CNC shop, welding shop, 3-D Printing etc.
- Measurement and testing of mechanical properties of engineering materials, measurement and testing of fluid and flow properties etc.
- Basic computer skills, knowledge of procurement practices such as justification and technical specification preparation.

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.
- The medium of instruction/answers will be English only.
- 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.