

**Syllabus and Scheme of Examination for the Post of Junior Laboratory Assistant (Technical)**  
**School of Mechanical & Materials Engineering.**  
**Advertisement No. IIT Mandi/Recruit./NTS/2023/02 dated March 22, 2023**

**Date: 25.11.2023**

**Reporting Time: 09:00 a.m.**

**Venue: Hall A, North Campus, IIT Mandi**

There will be a two-stage examination.

**Stage I : Written Examination**

**Stage II : Skill/Trade Test**

<b>Stage-1</b>	
Written Examination (Total Marks: 50 Time Duration: 01:30 hours) questions will be MCQ type	
<b>Syllabus</b>	<ul style="list-style-type: none"><li>➤ Introduction: Engineering materials, their manufacturability and application</li><li>➤ Machining: Lathe, drilling, milling, and grinding machines and their operations.</li><li>➤ Casting: Design of patterns, moulds and cores, allowances, molding sand, composition and properties Different types of castings, solidification and cooling, riser &amp; gating design, defects and their remedies.</li><li>➤ Joining: Welding, Soldering and Brazing, and their applications in the electronics industry</li><li>➤ Forming: Forging, rolling, extrusion, drawing, sheet metal operations</li><li>➤ Nonconventional Manufacturing Processes: Manufacturing techniques and their applications</li><li>➤ CNC Machine Tool: An introduction of machining principles and concepts related to computer numerical control (CNC), programming, and tooling requirements for CNC/CAM machines.</li><li>➤ Additive manufacturing processes: Introduction to 3-D printing, Extrusion, Jetting, Design and fabrication processes - data sources, software tools, file formats, model repair and validation, post-processing</li><li>➤ Administrative and financial approval for the procurement for machine tools and raw material.</li></ul>



**Stage-2 - Skill/Trade Test**

**Syllabus**

- Job preparation in machine shop, sheet metal shop, foundry shop, CNC shop, and welding shop.
- Administrative and financial approval for the procurement for machine tools and raw material.

### **General information about the exam**

- The MCQs have negative markings for wrong answers. For a correct answer, 1 mark will be awarded, while for every wrong answer, 0.25 marks will be deducted. 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 a wrong answer.
- Use of only a 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 calculators, cell phones, logbooks, periodic tables, and any type of electronic device, etc., are strictly prohibited.
- Medium of instructions/answers will be English only.
- Involvement in any malpractice will lead to disqualification.
- Any additional instructions given during the selection process must be adhered to/complied.

### **Final selection**

- Final Selection will be made on the scores obtained in Stage-I (Written Exam), as Stage-II (Skill Test) is of a qualifying nature. But if a candidate fails to qualify in Stage-II (Skill Test), her/his candidature will not be considered further.