



Indian Institute of Technology Jodhpur

Department of Mechanical Engineering

SYLLABUS FOR THE POST OF JUNIOR TECHNICAL ASSISTANT

(Pay Level 3)

Advt. No. 23

WRITTEN TEST & TRADE TEST

(Total Marks 100)

- 1. Foundry Shop:** Understanding of basic steps in casting operation, terminology, process flow; mould making process and tools; sand testing equipment; working and operation of equipment using in casting shop; Safety precautions for foundry
- 2. Machine Shop:** Standard machine tools and their operations; Cutting tools for various machines, cutting tool materials, tool geometry; Cutting fluids, classification; Grinding machine types and operations, types of grinding wheels, specifications; Safety precautions for machine shop
- 3. Assembly Shop:** Processes in fitting shop; Equipment; Layout procedure; File work; Thread cutting tools; Operation and types of chisels, scrapers, dividers, calipers
- 4. Welding Shop:** Welding processes and equipment; operations of welding machines; selection of consumables such as electrode, flux, nozzles, gas etc.; types of welds, joints and positions; Safety precautions for welding
- 5. Smithy, Forging and Sheet Metal Work:** Knowledge of equipment and tools for smithy, forging and sheet metal work; Operations related to Smithy, forging and sheet metal work; Knowledge of control parameters to achieve defect-free parts; Safety precautions
- 6. Metrology:** Understanding related to operation and working principles of measuring equipment and tools used for inspection on shop floor; Knowledge of standards of measurement; Measurement of Surface roughness
- 7. Advanced Manufacturing:** Understanding related to operation and working principles of advanced manufacturing and inspection equipment such as CNC Machines, 3-D Printers, Coordinate Measuring Machine; Knowledge of computational tools for component fabrication; Knowledge of Programming for component fabrication; Reverse Engineering of components on CMM

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