Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram
Ref : Advt: IIITDM/NT/R/02/2025 dated 10.07.2025

IIITDM/NT/R/02/2025/JT(DESIGN)   03.09.2025

SYLLABUS FOR THE POST OF JUNIOR TECHNICIAN (DESIGN)

Levels	Details
Level 1	General Ability Test (Multiple Choice Test)
Level 2	Technical Knowledge Test (Multiple Choice Test)
Level 3	Skill/Trade Test

Candidates securing minimum qualifying marks as laid down by the selection committee in Level 1 shall be shortlisted for Level 2 and Level 3. Final selection shall be based on aggregate marks obtained from Level 1, Level-2 and Level 3 with weightage of 10%, 50% and 40% respectively.

Level 1

Arithmetic & numerical ability, Quantitative aptitude, Data Interpretation, Logical reasoning, General English, General knowledge and Current affairs.

Level 2

Visualization and spatial ability: Pictorial and diagrammatic questions to test understanding of transformation and/or manipulation of 2D shapes and 3D objects and their spatial relationships, knowledge of practical and everyday mechanical and scientific concepts.

Practical and scientific knowledge: Know-how of scientific principles and everyday objects.

Observation and design sensitivity: The capacity to detect concealed properties in daily life and think critically about them. Attention to detail, classification, analysis, inference and prediction.

Creativity: Capacity to think out of the box and develop unique and diverse solutions.

Design methods and practices: Knowledge of media, materials, production processes, and ergonomics.

Problem identification: Capability to understand the user and the context, knowledge of properties of materials and their appropriate use in design.

Safety and Tools: Use of basic hand tools and Lab safety procedures

Basic Data processing using Computer.

Level 3 (Either Part A or Part B)

Part A - For candidates with Mechanical/Production/Automobile/Design & Drafting/Mechatronics Engineering background

Computer Aided Design: Use of any standard 3D CAD software (SolidWorks, AutoCAD etc.) to model standard machine components and ability to create 2D drawings from 3D models.

Design realization skills practice: Clay modelling, wax casting, paper craft modelling, transfer moulding, Vacuum thermoforming, powered hand tool (hand drilling machine, angle grinder, jig saw) operations, laser cutting, thermocole, wood working, basic sheet metal operations, Additive manufacturing: Fused filament fabrication, plastic welding, adhesive bonding, Design considerations for 3D printing, basics of slicing for 3D printing, resin-based printing techniques and Stereolithography (SLA) and machine safety.

OR

Part B - For candidates with Electrical and Electronics/Electronics and Communication/Instrumentation & Controls/ Mechatronics Engineering background

Microcontroller programming: Ability to program using Arduino/Raspberry Pi/ESP32 and interface with sensors and actuators, Design of 7 segment display using LED and microcontroller (8051 or equivalent)

Practical electronic skills:

- **Analog electronics:** Design of inverter using op-amp (IC 741 or equivalent).
- **Instrumentation:** Developing signal conditioning circuit (using resistors, inductors, capacitors) for temperature(thermocouple)/ pressure (strain gauge)/ pressure measurement
- Soldering and de-soldering, Assembly of a simple circuit, measuring voltage/current/resistance using a multimeter, Fault diagnosis on a PCB, using simulation tools, calibration of sensors, oscilloscope, function generator, and power supply, Handling electronic components safely.

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Registrar