



## **Selection Process for the post of Junior Technician [Chemical Engineering]**

(Staff Recruitment Advt. No: IITDH/ Admin/Staff Recruitment/26/2023-24 dated 12<sup>th</sup> September 2023)

All the shortlisted candidates are required to appear in person for the Written Test (s). The venue for Written Test (s) is IIT Dharwad, WALMI Campus, Belur Industrial Area, Near High Court Bench, Pune – Bengaluru Road, Dharwad, Karnataka.

Candidates securing minimum qualifying marks as laid down by the selection committee in Written test I shall be shortlisted for Written test II.

The final selection will be based on aggregate marks obtained from both the written tests (I & II) with weightage of 40% in Written Test I and 60% in Written Test II.

### **Examination Pattern:**

#### **Written Test -I (MCQ Type) (40% Weightage)**

Section	Topics/Subjects
1	General Ability Test
2	Technical Questions

*Note: 0.25 Negative Marks for every wrong answer MCQ test.*

#### **Written Test-II (60% Weightage)**

Section	Topics/ Subjects
3	Technical
4	Technical Trade/Skill Test (Pen and Paper)

*Note: 0.25 Negative Marks for every wrong answer in MCQ questions, If any.*

### **Syllabus:**

Section	Broad syllabus
1	General Awareness, Reasoning, Quantitative Aptitude, Communication Skills
2	<ul style="list-style-type: none"><li>• <b>Fluid Mechanics:</b> Fluid statics, surface tension, Newtonian and non-Newtonian fluids, friction factors, dimensional analysis, packed and fluidized beds</li><li>• <b>Heat Transfer</b> conduction, thermal boundary layer, boiling, shell and tube heat exchangers.</li><li>• <b>Mass Transfer:</b> Fick's laws, molecular diffusion in fluids, film, penetration and surface renewal theories, heat and mass transfer analogies, distillation.</li><li>• <b>Chemical Reaction Engineering:</b> ideal reactors, non-ideal reactors</li><li>• <b>Thermodynamics:</b> First and Second laws of thermodynamics</li></ul>
3	<ul style="list-style-type: none"><li>• Bernoulli's experiment</li><li>• Specific heat and thermal conductivity experiment</li></ul>
4	<ul style="list-style-type: none"><li>• Demonstration of Bernoulli's experiment</li><li>• Demonstration of specific heat and thermal conductivity experiment</li></ul>