



Selection Process for the post of Junior Technical Superintendent (Postcode 11)

(Staff Recruitment Advt. No: IITDH/Admin/Staff Recruitment/25/2023-24 dated 1st February 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">• Fluid Mechanics: Fluid statics, surface tension, Newtonian and non- Newtonian fluids, equation of continuity, equation of motion, equation of mechanical energy, friction factors, dimensional analysis, boundary layer theory, packed and fluidized beds, and flow meters.• Heat Transfer: Steady and unsteady heat conduction, convection, thermal boundary layer and heat transfer coefficients, boiling, condensation and evaporation, shell and tube heat exchangers.• Mass Transfer: Fick's laws, molecular diffusion in fluids, film, penetration and surface renewal theories, heat and mass transfer analogies, distillation, absorption, and drying.• Chemical Reaction Engineering: Theories of reaction rates, ideal reactors, non-ideal reactors, and kinetics of heterogeneous catalytic reactions.• Thermodynamics: First and Second laws of thermodynamics, Entropy, fugacity, excess properties and activity coefficients, and chemical reaction equilibrium• Mechanical Operations: Particle size and shape, particle size distribution, size reduction and classification of solid particles; free and hindered settling.
3	<ul style="list-style-type: none">• Pipe friction for laminar and turbulent flow• Bernoulli's principle



	<ul style="list-style-type: none">• Specific heat and thermal conductivity of given cylindrical material using Fourier law of conduction• Specific heat and thermal conductivity of given cylindrical material using Fourier law of conduction
4	<ul style="list-style-type: none">• Demonstration of pipe friction for laminar and turbulent flow• Demonstration of Bernoulli's principle• Demonstration of specific heat and thermal conductivity of given cylindrical material using Fourier law of conduction• Demonstration of specific heat and thermal conductivity of given cylindrical material using Fourier law of conduction