



IITPKD/R/NF/02/2024/50

23rd Apr 2025

Recruitment for the post of Junior Technical Superintendent - Civil (Post Code: 24207) and Junior Technician - Civil (Post Code: 24213) notified vide Advt. No.: IITPKD/R/NF/02/2024 dated February 07, 2024.

The selection process, indicative syllabus and date of examination for the post of Junior Technical Superintendent - Civil (Post Code: 24207) and Junior Technician - Civil (Post Code: 24213) advertised vide Advt. No.: IITPKD/R/NF/02/2024 dated February 07, 2024.

The selection process shall consist of a Level I Objective Test followed by a Level II Skill Test to those candidates shortlisted in the Objective Test.

Syllabus for Junior Technical Superintendent - Civil (Post Code: 24207):

Subject		Maximum Marks	Duration
Level I Objective test	Engineering Mechanics, Mechanics of Solids and Structural Analysis Concurrent force system; Equivalent force moment system; Centroids and Centre of gravity; Second Moment of area; Friction, Concept of stress and strain, Bending moment and shear force, Stresses in beams, Deflection of beams, Theory of columns, Truss analysis, Displacement response of statically determinate structural systems using energy methods, Principle of virtual work, Statically indeterminate structures, Strain Energy methods	60	90 mins

	Fluid Mechanics and Water Resources Engineering Fluid Statics- Fluid pressure, Buoyancy and floatation, Fluid Kinematics, Dynamics of fluid flow, Flow through orifice and notches, Flow through pipes, Boundary layer, Drag and Lift on immersed bodies. Surveying and Levelling, Quantity Surveying and Valuation Basics of Surveying, Levelling and Contouring, Area and Volume Computation, Theodolite Survey, Triangulation, Electronic Distance Measurement, Total Station Survey, Global Positioning Systems, Geographical Information System. Analysis of rates - Data book and schedule of rates, Analysis of rates for various items of work, Detailed specification. Types of estimates. Detailed estimate including quantities, abstract, and preparation of various items of works, Preparation of bar bending schedules for various RCC works. Valuation- Methods of valuation, Depreciation, Fixation of rent. Building materials, Construction Technology, Construction Management		
--	---	--	--

	Construction Materials, Mortar, Iron and Steel, Structural steel, Modern materials. Concrete–Admixtures, Making of concrete, Properties of concrete, Mix proportioning. Building construction- Foundations, Cost-effective construction, Masonry, Lintels and arches. Floors and flooring, Roofs and roof coverings, Doors, windows and ventilators, Finishing works. Construction Planning and Scheduling, Construction safety, Construction procedures. Geotechnical Engineering Major soil deposits of India, Classification and three phase system of soil, Permeability of soils, Principle of effective stress, Shear characteristics of soil, Consolidation (Terzaghi's theory of one-dimensional consolidation only) and Compaction. Lateral earth pressure-Rankine's and Coulomb' theories, Bearing capacity of soil, Estimation of magnitude of settlement, Site investigation, Standard Penetration Test and Plate load test, Design of shallow and deep foundations. Environmental Engineering: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage systems, circular		
--	--	--	--

	sewer, oval sewer, sewer appurtenances, sewage treatments. Surface water drainage. Solid waste management – types, effects, engineered management system. Air pollution – pollutants, causes, effects, control. Noise pollution – cause, health effects, control. Transportation and Traffic Engineering: Highway Engineering – cross sectional elements, geometric design, types of pavements, pavement materials – aggregates and bitumen, different tests, Design of flexible and rigid pavements – Water Bound Macadam (WBM) and Wet Mix Macadam (WMM), Gravel Road, Bituminous construction, Rigid pavement joint, pavement maintenance, Highway drainage, Railway Engineering Components of permanent way – sleepers, ballast, fixtures and fastening, track geometry, points and crossings, track junction, stations and yards. Different traffic surveys, speed-flow-density and their interrelationships, intersections and interchanges, traffic signals, traffic operation, traffic signs and markings, road safety.		
Level II Skill test	• All aspects of planning, handling, operation, testing, and data acquisition of experiments done in Surveying Lab, Strength of Materials and Material	60	90 mins

	Testing Lab, Hydraulics and Fluid Mechanics Lab, and Geotechnical lab. ● Identification and working principle of various tools and equipment used in different labs of Civil engineering.		
--	--	--	--

Syllabus for Junior Technician - Civil (Post Code: 24213):

Subject		Maximum Marks	Duration
Level I Objective test	Environmental Engineering: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage systems, circular sewer, oval sewer, sewer appurtenances, sewage treatments. Surface water drainage. Solid waste management – types, effects, engineered management system. Surveying and Levelling Basics of Surveying, Levelling and Contouring, Area and Volume Computation, Theodolite Survey, Triangulation, Electronic Distance Measurement, Total Station Survey, Global Positioning Systems, Geographical Information System.	60	90 mins

	Engineering Mechanics, Mechanics of Solids and Structural Analysis Concurrent force system; Equivalent force moment system; Centroids and Centre of gravity; Second Moment of area; Friction, Concept of stress and strain, Bending moment and shear force, Stresses in beams, Deflection of beams, Theory of columns, Truss analysis, Displacement response of statically determinate structural systems using energy methods. Fluid Mechanics and Water Resources Engineering Fluid Statics- Fluid pressure, Buoyancy and floatation, Fluid Kinematics, Dynamics of fluid flow, Flow through orifice and notches, Flow through pipes Building materials, Construction Technology Construction Materials, Mortar, Iron and Steel, Structural steel, Modern materials. Concrete–Admixtures, Making of concrete, Properties of concrete, Mix proportioning. Building construction- Foundations, Cost-effective construction, Masonry, Lintels and arches. Floors and flooring, Roofs and	
--	--	--

	roof coverings, Doors, windows and ventilators, Finishing works. Geotechnical Engineering Major soil deposits of India, Classification and three phase system of soil, Permeability of soils, Principle of effective stress, Shear characteristics of soil, Consolidation (Terzaghi's theory of one-dimensional consolidation only) and Compaction. Lateral earth pressure-Rankine's and Coulomb' theories Bearing capacity of soil,—Standard Penetration Test and Plate load test, Design of shallow and deep foundations. Transportation and Traffic Engineering: Highway Engineering – cross sectional elements, geometric design, types of pavements, pavement materials – aggregates and bitumen, different tests, Design of flexible and rigid pavements – Water Bound Macadam (WBM) and Wet Mix Macadam (WMM), Gravel Road, Bituminous construction, Rigid pavement joint, pavement maintenance, Highway drainage, Railway EngineeringComponents of permanent way – sleepers, ballast, fixtures and fastening, track geometry, points and crossings, track junction, stations and yards.		
--	--	--	--

	Different traffic surveys, speed-flow-density and their interrelationships, intersections and interchanges, traffic signals, traffic operation, traffic signs and markings, road safety.		
Level II Skill test	• All aspects of planning, handling, operation, testing, and data acquisition of experiments done in Environmental Engineering Lab, Surveying Lab and Geotechnical Engineering lab. • Identification and working principle of various tools and equipment used in different labs of Civil engineering.	60	90 mins

Final selection will be based on the order of merit in the objective test (40%) and skill test (60%). Skill test shall be conducted only to those candidates who are shortlisted in the objective test.

Tentative Schedule of Examination:

Sl. No	Post Name	Date
1	Junior Technical Superintendent - Civil (Post Code: 24207)	04 May 2025
2	Junior Technician - Civil (Post Code: 24213)	04 May 2025

The details of venue, reporting time, exam commencement time and other instructions shall be shared along with the hallticket that will be issued to the shortlisted candidates over email in due course.

-Sd-
Registrar