

Selection Process for the post of Civil Engineer and Electrical Engineer on contract

(Staff Recruitment Advt. No.: IITDh/Admin/SR/34/2025-26 dated 25th April 2025)

All the shortlisted candidates are required to appear in person for **Interview followed by a Trade Test** scheduled on 25th July 2025. The venue for the Interview is IIT Dharwad, Karnataka.

Syllabus for Interview and Trade Test:

Name of the Post	Broad syllabus
Civil Engineer [on Contract]	<ol style="list-style-type: none"> 1. Basics of Civil Engineering <ul style="list-style-type: none"> Units, measurements, and conversions Surveying fundamentals Engineering materials (concrete, steel, aggregates, etc.) Soil mechanics basics 2. Construction Techniques and Practices <ul style="list-style-type: none"> Excavation, backfilling, and compaction Formwork, scaffolding, and shuttering Concreting methods (including curing) Masonry and plastering works Reinforcement detailing and placement Road works and pavement layers 3. Site Management & Supervision <ul style="list-style-type: none"> Reading and interpreting drawings (architectural, structural) Daily progress reporting Coordination with contractors and consultants Quality checks and workmanship Material reconciliation Safety practices and PPE requirements 4. Estimation and Costing <ul style="list-style-type: none"> Quantity take-off (BOQ preparation) Rate analysis of basic items Material and labor cost estimation 5. Quality Control & Testing <ul style="list-style-type: none"> Common field/lab tests for concrete, soil, and aggregates Acceptance criteria as per IS codes Workmanship checklists 6. Codes, Standards & Documentation <ul style="list-style-type: none"> Basic knowledge of IS codes relevant to site work Construction documentation and record-keeping Method statements and checklists 7. Tools & Software (Basic Awareness) <ul style="list-style-type: none"> AutoCAD for drawing interpretation MS Excel for reporting and calculations 8. Soft Skills <ul style="list-style-type: none"> Communication and coordination Problem-solving at site Time management and adaptability

	<p>9. Types of structures:</p> <ul style="list-style-type: none"> • determinate and indeterminate • Analysis of beams, trusses, and frames • Influence lines for beams and trusses • Moment distribution method • Slope deflection method • Matrix methods (stiffness and flexibility) • Plastic analysis of structures • Working Stress and Limit State Methods • Design of beams, slabs, columns, and footings • Bond, anchorage, and development length • Torsion and shear design • Detailing of reinforcement • IS 456:2000 code provisions <p>10. Water Resource engineering</p> <ul style="list-style-type: none"> • Hydrology • Irrigation Engineering • Ground water Management and Rainwater Harvesting [RWH] • Water Management and Environmental Concerns <p>11.Environmental Engineering</p> <ul style="list-style-type: none"> • Water Supply Engineering • Waste Water Engineering • Air Pollution and Control • Solid Waste Management • Green Buildings
<p>Electrical Engineer [on Contract]</p>	<p>1. Basic Electrical Engineering Concepts</p> <ul style="list-style-type: none"> • Ohm's Law, Kirchhoff's Laws • Single-phase and three-phase systems • Power (kW, kVA, kVAR), Power factor • Earthing and grounding fundamentals • Types of wiring systems <p>2. Electrical Equipment & Systems</p> <ul style="list-style-type: none"> • Transformers, generators, and motors • Switchgear (MCB, MCCB, ACB, VCB, etc.) • UPS and DG systems • HT/LT distribution systems • Lighting systems (internal and external) • Cabling types and selection (LT/HT cables, control cables) <p>3. Site Execution and Installation</p> <ul style="list-style-type: none"> • Cable laying, glanding, and termination • Conduit and cable tray installation • Panel erection and dressing • Earthing installation and testing • Lighting, power, and equipment wiring • Testing and commissioning procedures <p>4. Reading and Interpreting Drawings</p> <ul style="list-style-type: none"> • SLD (Single Line Diagram) • GA (General Arrangement) and layout drawings • Cable schedules and termination details • Control schematics

	<p>5. Codes, Standards & Safety</p> <ul style="list-style-type: none">• Basic awareness of IS/IEC/NBC codes• Electrical safety rules and lockout/tagout procedures• PPE and safety at construction site• Inspection checklists <p>6. Measurement & Testing</p> <ul style="list-style-type: none">• Megger test (IR testing)• Earth resistance testing• Continuity testing• Voltage, current, and power measurements <p>7. Estimation and Reporting</p> <ul style="list-style-type: none">• Quantity estimation (cables, conduits, panels, etc.)• Preparing DPRs (Daily Progress Reports)• Coordination with civil/mechanical teams and vendors• Material handling and reconciliation <p>8. Tools & Software (Basic Awareness)</p> <ul style="list-style-type: none">• AutoCAD (for electrical drawings)• MS Excel and Word (reporting and documentation) <p>9. Soft Skills</p> <ul style="list-style-type: none">• Communication and team coordination• Trouble shooting and decision making• Time and task management
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