



राष्ट्रीय प्रौद्योगिकी संस्थान, कुरुक्षेत्र  
**NATIONAL INSTITUTE OF TECHNOLOGY**  
(Under the Ministry of Education, Govt. of India)  
**KURUKSHETRA-136119**

**RECRUITMENT OF NON-TEACHING POSTS (REF.:ADVT. NO.:03/2023)**

<b>Name of the Post</b>	:	Technician (Level - 3) (Civil Engineering)
<b>Details of the Scheme &amp; Pattern of Examination:</b>	:	<b><u>PART A :</u></b> <ul style="list-style-type: none"><li>• Total Questions :100 (MCQ Type)</li><li>• Maximum Marks :100</li><li>• No Negative Marking</li></ul> <b><u>Breakup</u></b> <ul style="list-style-type: none"><li>○ General Awareness (20)</li><li>○ Reasoning (20)</li><li>○ Mathematics (20)</li><li>○ Test of English/Hindi Language (30)</li><li>○ Computer Awareness (10)</li></ul> <b><u>PART B :</u></b> <ul style="list-style-type: none"><li>• Specialization (Civil Engg.) :30 Questions</li></ul>
<b>Duration of Examination</b>	:	2.5 hours

- The Question Paper shall be Bilingual (English & Hindi) except the Section for the Test of Language wherever applicable.
- The medium of Part-B will be English only.

**SYLLABUS OF EXAMINATION**

**PART A:**

**General Awareness:** Includes questions relating to History, Indian Polity & Constitution, Art & Culture, Geography, Economics, General Policy, Science & Scientific Research, National/International Organizations /Institutions, current events, environment etc.

**Reasoning:** Includes questions relating to both verbal and non-verbal types, analogies, similarities, differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship, concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series etc.

**Mathematics:** Includes questions relating to Simplification, Decimals, Fractions, L.C.M., H.C.F., Ratio & Proportion, Percentage, Average, Profit & Loss, Discount, Simple & Compound Interest, Mensuration, Time & Work, Time & Distance, Tables & Graphs, etc.

**Test of English or Hindi:** In addition to the testing of candidate's understanding of the English or Hindi Languages, it's Vocabulary, Grammar, Sentence Structure, Synonyms, Antonyms and its correct usage etc. would also be tested.

**Computer Applications:** Includes questions on Operating System, MS Office, MS Word, MS Excel, Power Point, Tally, Internet, E-mail, Antivirus and various online tools used in day- to-day office work.

## **PART B:**

### o **Civil Engineering**

**Computer awareness:** Basic knowledge of Computer Applications, viz; MS Word, MS Excel, Power Point etc. Internet, MS-DOS, Data Entry, Softwares knowledge, applications of computers in civil engineering

**Surveying:** Introduction, History and principles of chain survey. Classification, accuracy, types of chains and tapes. Direct and Indirect ranging.

**Compass survey:** Instrument and its setting up, Bearing and each included angle of close traverse. Local attraction. Magnetic declination and its true bearing. Precaution in using prismatic compass.

**Levelling:** Auto level, dumpy Level, Tilting Level - introduction, definition - Principle of levelling. Levelling staffs, its graduation & types. Temporary and permanent adjustment, procedure in setting up. Level & horizontal surface. Datum Benchmark, Focusing & parallax Deduction of levels / Reduced Level. Types of leveling, Application to chain and Levelling Instrument to Building construction. Reciprocal levelling.

**Contouring:** Definition, Characteristics, Methods. Direct and Indirect methods - Interpolation of Contour, Contour gradient, Uses of Contour plan and Map. Application of contouring for road project.

**Theodolite survey:** Introduction. Types of theodolite. Uses, Methods of Plotting. Transit vernier theodolite. Terms of transit theodolite. Fundamental line of theodolite. Adjustment of theodolite.

**Total Station:** Introduction. Components parts, accessories used.

**GPS (Global Positioning System):** Introduction of GPS system. Definition and application of Remote sensing.

**Water supply:** Introduction. Terms used in PHE. Various types of water supply pipes and fittings. Material specification. Type of overhead and underground water tanks. Tools and equipment's used in water supply system. Basic concept, terminology and process used in Water treatment plant -

**Systems of sanitation:** System of house drainage, plumbing, sanitary fittings, etc. Types of sewer appurtenance, Systems of plumbing. Type of sewage disposals. Manholes, soak pit & Septic tank. Basic concept, terminology and process used in Sewerage treatment plant.

**Note:-** The Syllabus is suggestive and indicative in nature having only broader areas for reference. The Candidate is expected to have the holistic and expanded knowledge of the subject/syllabus.

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