



डा बी आर अम्बेडकर राष्ट्रीय प्रौद्योगिकी संस्थान, जालन्धर  
DR BR AMBEDKAR NATIONAL INSTITUTE OF TECHNOLOGY JALANDHAR

**Syllabus for written test for the post of Junior Engineer (Civil)**

**Computer awareness:**

Basic knowledge of Computer Applications, viz; MS Word, MS Excel, Power Point etc. Internet, MS-DOS, Computer Generation & Development, UNIX, Windows, Lotus, SmartSuite, Data Entry, Softwares knowledge, Networking Platforms, applications of computers in electrical engineering

Knowledge of NIT Act and Statues and amendments issued from time to time, Basic knowledge of relevant General Financial Rules and RTI Act.

Analysis rates, Estimating of quantities of materials, Specifications (DSR, CSR etc.), Specifications for roads and bridges, Measurement of work methods, Project estimate and public works accounts, Contracts and measurement book, Knowledge of e-tendering for construction and maintenance activities, Arbitration and valuation, Quality assurance/quality control, Health and safety measures, Capacity building, PERT and CPM, Construction equipment and machinery, Knowledge of latest surveying and levelling equipment and techniques, Building bye laws.

Estimation of water demand, Drinking water Standards, Planning and design of domestic waste water, sewage collection and disposal, Plumbing System. Components and layout of sewerage system, Industrial waste waters and Effluent Treatment Plants including institutional and industrial sewage management.

Introduction of Reinforced concrete and steel design, Testing of concrete for fresh and hardened properties, Basics of concrete mix design, Maintenance of buildings and roads.

Basic concepts of bending moment and shear force, Simple stress and strain, Simple bending theory, Flexural and shear stresses.

Origin of soils, Soil classification, Three-phase system, Fundamental definitions, Relationship and interrelationships, Permeability & seepage, Consolidation, Compaction, Shear strength.

Sub-surface investigations- penetration tests, plate load tests, Foundation types-foundation design requirements, Shallow foundations-bearing capacity, effect of water table and other factors, stress distribution, settlement analysis in sands and clays.

Introduction to brick masonry, Stone masonry, Walls, Damp proofing, Arches and lintels, Doors and windows, Stairs and staircases, Plastering and pointing, White washing, Distempering and painting, Scaffolding.