

Dr B R Ambedkar National Institute of Technology, Jalandhar

Syllabus for Written Test for the Post of Executive Engineer (Civil)

Time: 02 Hours

(Max. Marks: 100)

Part-A (Marks-20)	Knowledge of NIT Act and Statues and amendments issued from time to time, Basic knowledge of relevant General Financial Rules and RTI Act.
Part-B (Marks-40)	<p>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.</p> <p>Estimation of water demand, Drinking water Standards, Water Treatment Plants, Water distribution networks. Planning and design of domestic waste water, sewage collection and disposal, Plumbing System. Components and layout of sewerage system, Planning & design of Domestic Waste-water disposal system, Sludge management including treatment, disposal and re-use of treated effluents, Industrial waste waters and Effluent Treatment Plants including institutional and industrial sewage management.</p> <p>Reinforced concrete and steel design, Vetting of structural design, Knowledge of relevant Indian Standard Codes of Practice, Testing of concrete for fresh and hardened properties, Basics of concrete mix design, Non-destructive testing of concrete, Knowledge of special concretes, Maintenance of buildings and roads.</p>
Part-C (Marks-40)	<p>Basic concepts of bending moment and shear force, Simple stress and strain, Simple bending theory, Flexural and shear stresses, Shear center, Buckling of columns, combined and direct bending stresses.</p> <p>Origin of soils, Soil classification, Three-phase system, Fundamental definitions, Relationship and interrelationships, Permeability & seepage, Effective stress principle, Consolidation, Compaction, Shear strength.</p> <p>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.</p> <p>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</p>