

**SYLLABUS FOR THE RECRUITMENT TEST TO THE POST OF
ASSISTANT ENGINEERS (CIVIL)**

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| Technical Paper | - 90 Marks (Duration - 3 Hours) |
| Personal Interview | - 60 Marks (for short listed candidates only) |
| Total | - 150 Marks |

The questions will be of multiple choice.

Technical Paper (90 Marks)

The standard of the questions in Engineering subjects will be approximately of the level of Degree in Engineering (Civil) from a recognized Institute, Board or University recognized by All India Board of Technical Education. All the questions will be set in SI units. The details of the syllabus are given below:

- 1. BUILDING MATERIALS AND CONSTRUCTION PRACTICES:** Properties of engineering materials-brick, stones, aggregates, cement (types and grades), concrete (mix design), Concrete admixtures, Self-compacting Concrete, steel and new materials.
- Construction of stone masonry, brick masonry and R.C.C. and block masonry – construction equipments - Building bye - laws and Development regulations practiced in Tamil Nadu - Provisions for fire safety, lighting and ventilation- Acoustics.
- 2. ENGINEERING SURVEY:** Survey - computation of areas - Chain Survey - Compass surveying - Plane table survey - levelling - fly levelling - L.S. and C.S. - Contour volumes - Theodolite survey - Traversing - Heights and Distances - Geodetic Observations- Tacheometry and Triangulation - Use of EDM, GPS and Remote sensing techniques.
- 3. STRENGTH OF MATERIALS:** Stresses and strains -Thermal stresses- elastic constants - Beams and bending - Bending moment and shear force in beams - Theory of simple bending - deflection of beams - torsion - Combined stresses – stresses on inclined planes - Principal stresses and principal planes - Theories of Failure – Analysis of plane trusses.
- 4. STRUCTURAL ANALYSIS:** Indeterminate beams - Stiffness and flexibility methods of structural analysis - Slope deflection - Moment Distribution method – Arches and suspension cables - Theory of columns - moving loads and influence lines – Matrix method- Stability of retaining walls – plastic theory.
- 5. GEOTECHNICAL ENGINEERING:** Formation of soils - types of soils - classification of soils for engineering practice - Field identification of soils - Physical properties of soils - Three phase diagram - permeability characteristics of soils - stress distribution in soils - Theory of consolidation, shear strength parameters of soils - Compaction of soils. Soil exploration - Soil sampling techniques - Borelog profile - shallow foundations - Terzhagi's bearing capacity theory - Pile foundation - Group action of piles - settlement of foundations.

