

NE01: Jr. Engineer (Civil Engineering)

Building Materials:

Physical and Chemical properties, Classification, Standard tests, Uses and manufacture/quarrying of materials e.g. building stones, silicate based materials, cement (Portland), Asbestos products, Timber and Wood based Products, laminates, bituminous materials, paints, varnishes.

Surveying:

Principles of surveying, working of prismatic compass and bearings, Plane table surveying, Theodolite traverse, Adjustment of theodolite, Levelling and contouring, Curvature, Refraction correction, Permanent adjustment of dumpy level, Methods of contouring and uses of a contour map, Tachometric survey.

Soil Mechanics:

Origin of soil phase diagram, Definitions, Of void ratio porosity, Degree of saturation, Water content specific gravity of soil grains and unit weights, Grain size distribution curves for different soil and their uses, Atterberg's limits soil classification, Plasticity chart, Coefficient of permeability, Effective stress, Consolidation of soils.

Soil:

Calculation shear strength of soils, direct shear test, Vane shear test, Triaxial test, Soil compaction, Lab compaction Lab compaction test, Moisture content and bearing capacity of soils, Plate load test, and Standard penetration test.

Hydraulics:

Fluid properties, Hydrostatics, Measurements of flow, Bernoulli's theorem and its application, Flow through pipes, Flow in open channels, Weirs, Flumes, Spillways, Pumps and turbines.

Environmental Engineering:

Quality of water, Source of water supply, Purification of water, Distribution of water, Need of sanitation, Sewerage systems, Circular sewers, Oval sewer, Sewer appurtenances, Surface water drainage sewage treatments.