Name of Specialization: Geotechnical Engineering
No. of Question: 50 (Objective Type)
Duration: 1 Hr. 30 Min Maximum Marks: 50

Index properties of soil, Classification, pure water pressure, effective stress, permeability, seepage and capillarity. Shear strength, Mohr-Coulomb theory, shear strength of cohesive and non-cohesive soil, drainage conditions. Stresses in soil mass due to applied loads. Compaction characteristics, Compressibility of soil, Terzaghi one dimensional consolidation theory, degree of consolidation, compressibility parameters, three-dimensional effect on consolidation. Stability analysis of finite and infinite slopes, various methods of analysis, Taylor's stability number. Earth pressure theories and analysis, sheet piles, bulkheads. Bearing capacity of soil, various theories of bearing capacity, analysis and design of shallow foundations and Deep foundation. Analysis and design of embankment dams. Numerical methods in geotechnical engineering. Index and engineering properties of rocks, shear strength and bearing capacity of rocks. Field tests and soil investigation methods.