

SYLLABUS FOR WRITTEN TEST (CIVIL)

1- APPLIED MECHANICS

Introduction, Laws of forces, Moment, Friction, Centre of Gravity, Simple Machines.

2- STRUCTURAL MECHANICS

Properties of Materials, Simple Stresses and Strains, Shear Force and Bending Moment, Moment of Inertia, Bending Stresses in Beams, Shear Stresses in Beams, Slope and Deflection, Columns, Analysis of Trusses, Stability of dams.

3- CONCRETE TECHNOLOGY

Introduction, Cement, Aggregates, Water, Properties of Concrete, Workability, Strength, Proportioning for Normal Concrete, Introduction to Admixtures, Special Concretes (only features), Concreting Operations, Mixing, Importance and methods of non-destructive tests (introduction only)

4- DESIGN OF REINFORCED CONCRETE & STEEL STRUCTURES

Introduction, Working stress method, Limit state method, Shear and Development Length, Singly Reinforced Beam, Doubly Reinforced Beams, Behavior of Flanged beams, One Way Slab, Two Way Slab, Axially Loaded Column, Basic concepts of Column Footings, Introduction to Structural Steel and Sections, Riveted Connections, Welded connections, Tension Members, Compression Members, Roof Trusses(only concept), Columns, Beams, Masonry structures - Design of brick column and wall foundations .

5- CONSTRUCTION MATERIALS & BUILDING CONSTRUCTION:

Building Stone, Bricks and Tiles, Cement, Lime, Timber and Wood Based Products, Paints and Varnishes, Metals, Glass, Foundations, Walls, Stone Masonry, Brick Masonry, Arches and Lintels, Doors, Windows and Ventilators, Damp Proofing and Water Proofing, Floors, Roofs, Surface Finishes, Anti Termite Measures, Elements of Engineering Seismology, General features of tectonic of seismic zones, Causes of earthquakes, Provision of reinforcement detailing in masonry and RC constructions,

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6- CONSTRUCTION MANAGEMENT & ACCOUNTS

Introduction, Construction Planning, Organization, Site Organization, Construction Labor, Labor Welfare Fund Act 1936, Payment of Wages Act 1936, Minimum Wages Act 1948, Control of Progress, Inspection and Quality Control, Accidents and Safety in Construction, Public Work Accounts- Technical sanction, allotment of funds, re-appropriation of funds bill, contractor ledger, measurement book running and final account bills, hand receipt, acquittance roll. Muster Roll, budget-stores, returns, account of stock, T&P verification, survey report, road metal material charged direct to works, account - expenditure & revenue head, remittance and deposit head, definition of cash, imprest account, temporary advance, treasury challan.

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7- QUANTITY SURVEYING AND VALUATION

Types of estimates, Measurement, Calculation of quantities of materials, Analysis of Rates, Preparation of Tender Document, Valuation.

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8- FLUID MECHANICS

Introduction, Properties of Fluids, Hydrostatic Pressure, Measurement of Pressure, Fundamentals of Fluid Flow, Flow Measurements, Flow through Pipes, Flow through open channels, Hydraulic Pumps.

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