Syllabus for the posts of Assistant Engineer (Civil, Mechanical & Electrical) 
in Irrigation Department, Haryana

Syllabus - AE Civil Engineering

(i) Building Materials and Construction- Stones, Timber, Bricks, Cement, Mortar, Concrete, Masonry, Steel.
(iii) Graphic Static- Force Polygon, Stress diagram.
(iv) Structural Analysis - Analysis of trusses and frames, Introduction to plastic Analysis.
(v) Design of Metal Structure - Working stress and ultimate strength design of simple structures.
(vi) Design of Concrete and Masonry Structures- Design of masonry walls, working stress design of plain, reinforced and prestressed concrete, ultimate strength design of reinforced and prestressed concrete.
(ix) Transportation Engineering including Railway Engineering and Surveying, Roads Super-elevation, Ruling gradient pavements, Traffic controls, Design Considerations.
(x) Environmental Engineering – Water purifications, Sewerage treatment and disposal.
(xi) Construction Planning and Management – Elements of construction practice. Bar charts, CPM, PERT.

Syllabus - AE Mechanical Engineering

(iii) Steam Boiler, Engines, Nozzles and Steam Turbines Modern boilers, Steam Turbines types Flow of Steam through nozzles. Velocity diagrams for impulse and Reaction Turbines. Efficiencies and Governing.


(ix) Strength of Materials : Stress and strain in two dimensions; Mohr’s circles: relations between Elastic Constants. Beams-Bending moments, shearing forces and reflection. Shafts-combined bending, direct and torsional stresses. Thick Walled cylinder and spheres under Pressure, Springs Struts and columns, Theories of failure.

(x) Engineering Materials; Alloys and Alloying Materials, heat treatment; Composition, properties and uses, Plastics and other newer engineering materials.

(xi) Production Engineering: Metal Machinery: Cutting Tools: Tool Materials, Wear and Machinability, measurement of cutting forces. Process: Machining Grinding, Boring, Geer, Manufacturing, Metal forming, Metal Casting and jointing, Basic, Special Purpose, Programme and numerically controlled machine tools, Jigs and fixtures (locating elements).

(xii) Industrial Engineering: Work study and work measurement Wage incentive, Design of Production System and Product Cost, Principles of Plant layout.

(xiii) Production Planning and Control Material handling, Operations Research, Linear Programming queuing Theory, Value Engineering, Network Analysis CPM and PERT. Use of computers.
Syllabus - AE Electrical Engineering


(v) Elements of Computation: Digital system, algorithms, flow-charting, Storage: Type statements, array storage, Arithmetic expression, logical expressions. Assignments statements, Programme structure, Scientific and Engineering applications.

