Annexure – 'H'

Syllabus for Draftsman

A) **Surveying:-**

- Importance of surveying, principles and classifications, measurements of distance and directions, chain surveying, compass surveying, leveling, tacheometry, theodolite, traversing, contouring, plane table surveying, curves.

B) **Mechanics and Structural Analysis:-**

- Introduction, Concept of rigid body scalar and vector quantities, laws of forces, moment, friction, center of gravity, simple machines, torsion, Properties of material, Bending moment and shear force in statistically determinate beams. Simple stress and strain relationship. Stress and strain in two dimensions, principle stresses, stress transformation. Simple bending theory, flexural and shear stresses, unsymmetrical bending, shear centre. Thin walled pressure vessels, uniform torsion, buckling of column, combined and direct bending stresses. Slope and deflection, analysis of trusses.
- Modern Tools and Technologies.
- GIS/RS applications in survey.

C) **Soil Engineering / Fluid Mechanics and Hydraulics:-**

- Origin of soils, properties, soil classification, definitions, relationship and interrelationship , flow of water through soils, permeability and seepage, effective stress principle.
- Properties of fluids, hydrostatic pressure, measurement of pressure, flow measurements, flow through pipes, flow through open channels, hydraulic pumps, principle of conservation of mass, momentum, energy and corresponding equations, potential flow, applications of momentum and Bernoulli's equation.

D) **Constructional Planning Management:-**

- Network diagrams, PERT-CPM, cost optimization contracts, tenders, depreciation, valuation, organization, measurement books, cash book, functions of management, construction planning, quality control, inventory control, Estimation and costing definitions, methods of estimation and type of estimates.
- Programme such as CAD.

E) **Water supply and waste water Engineering:-**

- Introduction, quantity of water, quality of water, water treatment, conveyance of water, laying out of pipes, Building water supply, water supply fixtures and installation ,plumbing, sewerage system, laying and construction of sewers, sewage characteristics, Methods of disposal, sewage treatment , building drainage, air and noise pollution.