

**UNIT I****Chapter 1 : Properties of Fluid 1-1 to 1-24**

Definition of fluid, concept of continuum, density, specific weight, specific gravity, viscosity, viscosity laws, types of fluid and rheology, measurement of viscosity, application based numerical on viscosity-flow through pipe, lubrication, bearing, brake fluids, parallel plates, rotating shafts etc., vapor pressure surface tension, capillarity, compressibility.

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Laws of fluid statics : forces acting on fluid element, Pascal's law, hydrostatics law, hydraulic ram

Pressure measurement : pressure scale, piezometer, barometer, manometer - simple, inclined, differential, micro manometer, inverted.

Forces acting on surfaces immersed in fluid : total pressure and center of pressure on submerged plane surfaces, curved surface submerged in liquid including numerical on dam, gate.

Buoyancy : flotation, stability of bodies.

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UNIT IV

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UNIT V

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UNIT VI

Chapter 8 : Dimensional Analysis and Similitude 8-1 to 8-24

Dimensional Analysis : Introduction, system of dimensions, Dimensional homogeneity, Buckingham-Pi Theorem, repeating variables, dimensionless numbers and their physical significance.

Similitude and Model Testing : Model and prototype, similarity, scaling parameters, model laws, objectives, importance and application of model studies.

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