MODEL QUESTIONS.

No1 Answer all Questions. 2×10

(a) what is the difference between poise and stoke?

(b) what is the relationship between density and weight density of the fluid. ?

(c) State Pascal's law.

(d) what is Archimedes principle ?

(e) Define meta centric height.

(f) what is the difference between steady and unsteady flow. ?

(g) Differentiate between notch and weir.

(h) write down Chezy's and Darcy-Weisbach formula

(i) what is impact of Jet. ?

(J) Define Centre of Pressure and Total pressure.

No2 Answer any six questions. 5×6

(a) Explain different types of Fluid Properties

(b) Define and Explain the relationship between three orifice Co-efficients.

(c) Calculate the specific weight, specific mass, specific volume and specific gravity of a liquid having a volume of $6m^3$ and weight of 44 kN.

(d) Explain hydraulic gradient line and Total Energy line.

(e) what are classifications of notch and weir?

(f) Determine the total pressure on a circular plate of diameter 1.5m which is placed vertically in water in such a way that the centre of the plate is 3m below the free surface of water. Find the position of centre of pressure also.

(g) Derive work done on series of vanes and condition for maximum efficiency.

(h) Derive discharge over a triangular notch.

No 3: State and Proof Bernoulli's Theorem. | 10

No 4: In a pipe of diameter 350mm and Length 75m water is flowing at a velocity of 2.8 m/sec. Find the head lost due to friction using (i) Darcy-weisbach formula (ii) chezy's formula for which C = 55

Assume kinematic viscosity of water as 0.012 Stoke. | 10

No 5 The water is flowing through a pipe having diameters 20cm and 10cm at sections 1 and 2 respectively. The rate of flow through pipe is 35 litres/sec. The section 1 is 6m above datum and section 2 is

4 m above datum. If the pressure at section 1 is 39.24 N/cm^2. Find the intensity of pressure at section 2. [10]

No6 Derive discharge formula for Venturimeter. [10]

No7 (a) Derive Continuity equation. [4]

(b) Find the discharge over a triangular notch of angle 60° when the head over the triangular notch is 0.2 m. Assume $C_d = 0.6$.

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