H&HM

MID II IMPORTANT QUESTIONS

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1. A jet of water of diameter 150 mm strikes a flat plate normally with a velocity of 10m/s. The plate is moving with a velocity of 4 m/s in the direction of the jet and away from the jet. Determine: (i) The force exerted by the jet on the plate, (ii) Work done by the jet on the plate per second,(iii) Power of the jet, and (iv) Efficiency of the jet.

2. Explain about angular momentum principle.

3. Comparison between the force exerted by a jet on a single curved moving plate and a series of curved moving plate.

4. The following data is related to the pelton wheel:

Head at the base of the nozzle = 100m,

Diameter of the jet = 7.5 cm,

Discharge of the nozzle = 250 litres/s,

Shaft power = 191.295 kW,

Power observed in mechanical resistance = 3.675 kW.

Determine (i) Power lost in the nozzle and, (ii) Power lost due to hydraulic resistance in the runner.

5. Derive unit quantities.

6. Explain the characteristics curves of a pumps and their significance?

7. A single acting reciprocating pump running at 35 r.p.m., delivers 0.012 m3/sec of water. The diameter of the piston is 25 cm and stroke length is 60 cm.

Determine: (i) The theoretical discharge of the pump, (ii) Co-efficient of discharge and (iii) Slip and percentage slip of the pump.

8. Discuss various classifications of different types of hydropower plants.

9. What is draft tube? What are the functions of draft tube? Explain different types with figures and draft tube theory.

10. Derive the expression for the specific speed of Turbine and Pump.