

Question Bank (G scheme)

Name of subject: FLUID MECHANICS & MACHINERY

Subject code: 17411

Semester: VI

Unit Test :II

Course : ME

Ch.4 impact of jet

3 marks questions

1. Define the term impact of jet.
2. Draw inlet and outlet velocity diagram of velocity of jet of moving curved vanes.

4 marks questions

1. A jet of water 50mm in dia. under constant head of 50m impinges on a fixed blade normally. Find force exerted by jet if coefficient of velocity is 0.95.
2. Draw neat sketch for impact of jet on a moving vertical flat plate and write the formula to determine the work done.

Ch.5 Turbines

3 marks questions

- 1) Draw a layout of hydroelectric power plant and explain its working briefly.
- 2) Give the classification of hydraulic turbines.
- 3) State the function of draft tube and draw the neat sketches of draft tube.

4 marks questions

- 4) Differentiate impulse turbine with reaction turbine.
- 5) Differentiate Francis turbine with Kaplan turbine
- 6) Explain the working of Pelton wheel turbine.
- 7) A Pelton wheel has mean bucket speed of 30 m/s with a jet of water flowing at the rate of 1 cubic meter per sec under a head of 250m. The bucket deflect jet through angle of 170 degree. Calculate power developed and the efficiency of the turbine. Assume Coefficient of velocity= 0.98
- 8) A Francis turbine has external and internal diameters as 1m and 0.6m respectively . The hydraulic efficiency of turbine is 90% when the head on the turbine is 36m . The velocity of flow at outlet is 2.5m/s and discharge at outlet is radial. If the vane angle at outlet is 15degree and width of the wheel is 100mm at inlet and outlet. Determine (i) Guide blade angle (ii) speed of turbine.

Ch.6 Centrifugal Pump and Reciprocating pump

3 marks questions

- 1) What is priming? Why it is required?
- 2) State any two faults and their remedies on centrifugal pump.
- 3) What are the different types of impellers?
- 4) What is an air vessel? Describe the function of air vessel for reciprocating pump.
- 5) Define slip, percentage slip and negative slip of a reciprocating pump.
- 6) Draw theoretical indicator diagram for single acting reciprocating pump.

4 marks questions

- 7) Explain the construction and working of centrifugal pump.
- 8) Explain submersible pump with neat sketch.
- 9) Explain jet pump with neat sketch.
- 10) What did you understand by the term cavitation? How it can be avoided?
- 11) Describe the principle and working of a reciprocating pump with neat sketch.
- 12) Differentiate between centrifugal pump and reciprocating pump.
- 13) Mention the applications of reciprocating pump.
- 14) Explain the working of double acting reciprocating pump.