

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech (ME) (Sem.-6)

FLUID MACHINERY

Subject Code : ME-306

M.Code : 59055

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Discuss the concept of jet impingement on stationary and moving plates.
- b) Discuss the components of a Turbo machine.
- c) Discuss what is the significance of effective head in pelton turbines.
- d) What are Air-Vessels?
- e) Give differences between Francis and Kaplan turbine.
- f) Give the significance of surge tanks in turbines.
- g) What are torque converters?
- h) Explain the Euler's equation for energy transfer in turbo machines.
- i) Explain the concept of fluid coupling.
- j) Explain the significance of Multi-stage pumps.

SECTION-B

- Q2 Discuss the components parts and operations of Pelton Turbine.
- Q3 Discuss the significance of draft tubes and its types for Francis and Kaplan turbine.
- Q4 Discuss in brief the submersible pump.
- Q5 Discuss the concept of Net positive suction head and its application in determining turbine settings.
- Q6 Discuss the various trouble shooting field problems associated with centrifugal pumps and their remedies.

SECTION-C

- Q7 Explain the constructional parts and working details of reciprocating pumps.
- Q8 Explain in detail the concept of Axial and Mixed flow pumps.
- Q9 A pelton wheel having semi-circular buckets functions under a head of 150 m and consumes 50 litres per second of water. If 60 cm diameter wheel turns 600 revolutions per minute, make calculations for the power available at the nozzle and the hydraulic efficiency of the wheel. Presume coefficient of velocity equals to unity?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.