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2nd SEMESTER (A Group)

Roll No.

B.Tech.

MID SEMESTER EXAMINATION

FEB/MARCH-2015

PAPER CODE :ME-115; TITLE OF PAPER: BASIC MECHANICAL ENGINEERING

Time: 1:30 Hours

Max. Marks: 20

Note : Attempt all question. Assume suitable missing data, if any.

Part A

1. Define and classify thermodynamic system and thermodynamic properties. (2)
2. Explain the similarities between work transfer and heat transfer. (2)
3. Starting from first law of thermodynamics, derive expressions for specific heat at constant volume and specific heat at constant pressure. (2)
4. A turbine operates under steady flow conditions, receiving steam at following state: pressure 1.2 MPa, temperature 188° C, enthalpy 2785 kJ/kg, velocity 33.3 m/s and elevation 3m. The steam leaves the turbine at following state: pressure 20 kPa, enthalpy 2512 kJ/kg, velocity 100 m/s and elevation 0 m. Heat is lost to the surrounding at the rate of 0.29 kJ/s. If the rate of steam flow through is 0.42 kg/s. What is the Power output of the turbine in kW. (4)

Part B

1. What are the various manufacturing processes ? (2.5)
2. Define the **pattern**. Explain the various types of patterns. (2.5)
3. What do you understand by Die-casting? Explain hot chamber Die casting. (2.5)
4. Define welding and its classification with the help of hierarchical view. (2.5)