PVP 14

Code: CE1T6

I B.Tech - I Semester – Regular Examinations - January 2015

BASIC MECHANICAL ENGINEERING
(CIVIL ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks
11 x 2 = 22 M

1. a) Define Core.
   b) List out various types of joints commonly used in welding.
   c) What is scavenging?
   d) What is the function of a carburettor?
   e) Define the term 'Air conditioning'.
   f) Define Ton of Refrigeration.
   g) What do you mean by Elastic Limit?
   h) Define Toughness.
   i) What is centrifugal tension in a belt ?
   j) Write down the working principle of tidal power plant.
   k) What is the use of surge tank in hydropower plants?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Name and describe the different properties of good moulding sands. 8 M

   b) Sketch the three types of gas welding flames and give differences between them. 8 M

3. a) Describe the working of four stroke SI engine. Illustrate using line diagrams. 8 M

   b) What are the advantages of a two stroke engine over a four stroke engine? 8 M

4. a) With the help of a neat schematic diagram, explain the working principle of a vapour compressor on refrigeration system. 8 M

   b) Draw the layout of a air-conditioning unit and explain its working. 8 M

5. a) Discuss briefly the various types of belts used for the transmission of power. 8 M

b) State the working principle and advantages of thermal power plant. 8 M

6. a) A rod 100 cm long and of 2 cm x 2 cm cross-section is subjected to a pull of 1000 kg force. If the modulus of elasticity of the materials 2.0 x 106 kg/cm^2, determine the elongation of the rod. 10 M

b) A load of 5 KN is to be raised with the help of a steel wire. Find the diameter of steel wire, if the maximum stress is not to exceed 100 MN/m^2. 6 M