Code: CE1T6

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

BASIC MECHANICAL ENGINEERING
(CIVIL ENGINEERING)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11x 2 = 22 M

1. a) What are the important components of an Internal Combustion Engine?
   b) In what aspects a 4-stroke C.I. Engine differs from that of an 4-stroke S.I. Engine.
   c) Define Coefficient of performance (COP).
   d) Draw the line diagram of vapor compression refrigeration system.
   e) Define stress, strain and Young's Modulus of a material.
   f) Define proof stress of a material and mention its significance.
   g) Write the expression for volumetric strain of a body in terms of its linear strain in orthogonal direction.
   h) Mention the types of belt drives.
   i) What do you mean by Foundry?
   j) What are the advantages of casting process?
   k) How power is developed by hydraulic turbine?

PART – B

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

2. a) Explain the principles of gas welding and arc welding. 8 M

   b) Discuss various pattern allowances.   8 M

3. a) Explain why liquid fuels are mostly used in I.C. Engines.
                                                              4 M

   b) Describe the working of a 2-stroke Engine. Sketch its indicator diagram.   12 M

4.   Draw the simple layout of summer air conditioning system and explain its working.   16 M

5.   Explain in detail, the behavior of mild steel when subjected to a load test till failure.   16 M

6. a) Explain the working of a hydro electric power plant with a neat sketch.   8 M

   b) Write a short note on types of gears.   8 M