

Code: CE1T6

**I B.Tech - I Semester – Regular / Supplementary Examinations
December - 2016**

**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) What is a mould and its role in casting?
- b) What is the Principle of Gas Welding?
- c) What is Pre ignition?
- d) What is COP? Give an expression for COP of Refrigerator.
- e) Draw a simple layout of a refrigeration system.
- f) Explain the terms elasticity, factor of safety.
- g) What is Resilience? Explain with a stress-strain curve.
- h) Explain the terms :
 - i) Strength
 - ii) Hardness
 - iii) Creep
- i) Name the various types of gears.
- j) List the various components of steam power plants.
- k) List the various Alternate Energy Sources.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Write the procedure for preparation of casting. 8 M

b) Explain the equipment of arc welding with a neat sketch. 8 M

3. a) Explain the working of four stroke petrol engine. 9 M

b) Differentiate between 2-stroke & four-stroke engines. 7 M

4. Explain the working of simple refrigeration system with a neat sketch. List out the applications of a refrigeration system. 16 M

5. a) Derive the relationship between young's modulus, Bulk modulus & Rigidity Modulus. 8 M

b) What are the various electrical, magnetic & chemical properties of materials? Explain them in brief. 8 M

6. a) Differences between open belt & cross belt drives. Explain with diagram. Mention their applications. 8 M

b) Explain the layout of hydro electric power plant. 8 M