

Code: EC3T6

**II B.Tech - I Semester – Regular Examinations - January 2014**

**ELEMENTS OF MECHANICAL ENGINEERING  
(ELECTRONICS & COMMUNICATION ENGINEERING)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. a) Sketch and explain the different types of foundry tools?  
7 M
- b) Describe various properties of moulding sand? 7 M
2. a) How arc welding is different from that of gas welding? 7 M
- b) What are the different types of taper turning methods used in lathe operations? 7 M
3. a) Distinguish between open belt and cross belt drives? 7 M
- b) Explain the concept of gear trains. Explain with suitable sketches? 7 M
4. a) Describe the working principle of hydro electric power plant? 7 M

- b) What are the alternative sources of energy? 7 M
5. a) Explain the applications and advantages of refrigeration system? 7 M
- b) Sketch and explain the simple layout of the summer air conditioning system? 7 M
6. a) Distinguish between 4 stroke petrol and diesel engines? 7M
- b) Sketch and explain the main components of 2 stroke petrol engine? 7 M
7. a) Explain the concept of Hook's Law? Give few examples? 7 M
- b) Describe the stress strain relation for mild steel with suitable sketch? 7 M
8. Enumerate the following?
- a) Mechanical properties 7M
- b) Chemical properties 7M