Diploma / Integrated B.Tech 4th Semester (ME) Examination
June, 2014
Engineering Materials
Subject Code: MEL-032

Time Allowed: 03 hours. Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Question No. 1 is Compulsory and attempt two questions from each section. All questions carry equal marks.

Q1. (5X4=20)
   a. Define Fatigue and creep.
   b. What is difference between cold working and hot working process?
   c. Classified the steel on the basis of carbon percentage.
   d. What is non-ferrous metal and how they are classified?

SECTION A

Q2. (a) How the metal and alloy are differing on the basis of their properties? (10)
   (b) Write the short note on the various property of material such as: Plasticity, ultimate tensile strength, malleability and toughness. (10)

Q3. (a) Write the mechanism of corrosion in ferrous metal and what are effects of corrosion? (10)
   (b) Write the short note on the deformation of metal in briefly and also explain the crystal imperfections? (10)

Q4. (a) Define the Gray cast iron on the basis of their carbon percentage and explain the difference between the white cast iron and nodular cast iron? (10)
   (b) Describe the working function of cupola furnace with is detailed diagram. (10)

SECTION B

Q5. (a) Explain the various types of aluminum alloys. What are the application of aluminum alloy explain with example? (10)
   (b) Explain the various properties of fibers and how they are classified? (10)

Q6. (a) Explain the various properties of Insulation material. Give the name of five heat and electric insulation material? (10)
   (b) Explain various types of tests performed on metals and alloys? Explain with neat diagram. (10)

Q7. (a) Define the heat treatment. Explain the various method of heat treatment. (10)
   (b) Explain the Time Temperature and Transformation diagram for ferrous metal with its neat sketch? (10)