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BME-050

DIPLOMA IN MECHANICAL ENGINEERING (DME)/DMEVI

Term-End Examination

00630

June, 2016

BME-050 : ENGINEERING MATERIALS

Time : 2 hours *Maximum Marks : 70*

Note : *Question number **1** is **compulsory**. Attempt any **four** questions out of the remaining questions numbered 2 to 6. Use of calculator is permitted.*

1. Define any ***seven*** of the following : *7×2=14*

(a) Ultimate strength and Fatigue strength

(b) Transformation reactions in Iron-Carbon phase diagram

(c) Cooling rate and Quenching media

(d) Different heat treatments of Steel

(e) Contents of Cast Iron

(f) Manufacturing methods of Ceramics

(g) Polymerisation

(h) Classifications of Lubricants

(i) Tempering

2. (a) Distinguish between elastic and plastic deformation of a tension test specimen. Explain strain hardening.

(b) Explain the terms of the following :

(i) Toughness

(ii) Ductility

(iii) Brittleness *2×7=14*

3. (a) Name the different plain carbon steels and give some applications of each type.

(b) What are the electric heating processes used in making steel ? *2×7=14*

4. (a) Draw an Iron-Carbon equilibrium diagram. Explain it briefly.

(b) Define thermal-conductivity and piezo-electricity. Give units of its thermal-conductivity and explain its mechanism. *2×7=14*

5. (a) Distinguish between Austempering and Martempering.

(b) Describe the different types of adhesives and their properties. *2×7=14*

6. (a) Define the term lubricant. Describe the functions of lubricants.

(b) What are different chemical cleaning processes ? Explain in brief. *2×7=14*