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BME-050

DIPLOMA IN MECHANICAL ENGINEERING (DME)/DMEVI

Term-End Examination

June, 2015

00213

BME-050 : ENGINEERING MATERIALS

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. 1 is* ***compulsory****. Attempt any* ***four*** *out of the remaining five questions. All questions carry equal marks.*

1. Write short notes on the following : *7×2=14*

(a) Modulus of Elasticity

(b) Yield Strength

(c) Eutectoid Steel

(d) Tempering

(e) Fibre Reinforced Plastic

(f) Galvanizing

(g) Quenching

2. Explain, in detail, the stress-strain curve for a ductile material with proper sketch. Illustrate all the major points on the curve. *14*

3. Define Heat Treatment. List the types of heat treatment processes. Explain, in detail, the heat treatment process of annealing. *14*

4. (a) Explain the different types of mechanisms of lubrication.

   (b) What are the functions of cutting fluids ? Why are oil-water emulsions used as cutting fluids ? *7+7=14*

5. (a) What is creep strength and rupture strength ? $3\frac{1}{2}$

   (b) How does strain rate influence yield strength and ultimate tensile strength ? $3\frac{1}{2}$

   (c) A hammer weighing 100 N at the end of a swinging arm of length 400 mm is lifted to a height of 1000 mm from the level of Charpy test specimen. With what speed will the hammer strike the specimen ? *7*

6. Explain, in detail, the manufacturing process for reinforced plastic parts, with neat sketches. *14*