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DIPLOMA IN MECHANICAL ENGINEERING (DME/DMEVI)

Term-End Examination, 2019

BME-050 : ENGINEERING MATERIALS

Time : 2 Hours   **Maximum Marks : 70**

Note : Question **No. 1** is **compulsory**. Attempt **any four** questions out of the remaining questions number **2 to 6**. Use of calculator is permitted.

1.   Define **any seven** of the following :   [7x2=14]

    (a)   Ultimate strength and fatigue strength

    (b)   Heat treatment of steel

    (c)   Applications of mild steel

    (d)   Manufacturing methods of ceramics

    (e)   Polymerisation

    (f)   Tempering

(g) Annealing

(h) Cooling rate and Quenching media

2. (a) Differentiate between Elastic and Plastic deformation of a tension test specimen. Explain strain hardening. [7]

(b) Explain the following terms : [7]

(i) Toughness and Malleability

(ii) U.T.S. (Ultimate Tensile Strength)

(iii) % elongation

3. (a) Draw a neat and labelled iron-carbon equilibrium diagram and explain. [7]

(b) Explain critical cooling rate (C.C.R.). [7]

4. (a) Distinguish between Austempering and Martempering. [7]

(b) Describe the different types of adhesive and their uses in engineering. [7]

5. (a) Define Lubricant. Differentiate between Newtonian and non-Newtonian lubricants. [7]

(b) What are different chemical cleaning process ?
     Explain in brief.   [7]

6. (a) What is case hardening ? What are the methods
         used in case hardening ?   [7]

    (b) How is rubber obtained ? What are the uses of
         natural rubber ?   [7]

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