

**DIPLOMA IN MECHANICAL ENGINEERING
(DME) DMEVI**

Term-End Examination

December, 2013

BME-050 : ENGINEERING MATERIALS

Time : 2 Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Use of scientific calculator is permitted.

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1. (a) Give the classification of steels based on percentage of carbon content. 7
 - (b) Describe the various properties of different types of carbon steels. 7

 2. (a) Explain the classification of cast Iron. Also give their uses. 7
 - (b) Explain the properties and applications of Grey Cast Iron. 7

 3. (a) What is the difference between alloy and non alloy steels. 7
 - (b) What are the effect of chromium and molybdenum in low alloy steels ? 7

4. (a) Discuss the composition, properties and typical applications of any four copper alloys. 7
- (b) How will you classify brasses based on composition of Zinc? Explain the properties and application of the main type of brasses. 7
5. Write short notes on : 14
- (a) Austenitic stainless steel
- (b) Ferritic stainless steel
- (c) Martensitic stainless steel.
6. (a) Describe the properties and application of the following ceramics material : 7
- (i) Alumina
- (ii) Silicon carbide.
- (b) Describe the molecular structure, properties and application of the following polymeric materials : 7
- (i) Polymethyl methacrylate (PMMA)
- (ii) Polytetra fluoro ethylene (PTFE)
7. (a) Classify the reinforced plastics. Explain the main characteristics and its applications 7
- (b) Write short notes on : 7
- (i) Abrasive
- (ii) Plastics