

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

00197

Term-End Examination

June, 2014

BME-050 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

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

1. (a) Give the classification of Iron based on percentage of Carbon content. 7
- (b) Describe the physical properties of various types of Iron. 7
2. (a) What are the differences between Cast Iron and Steel ? Explain. 7
- (b) Explain the properties and applications of white Cast Iron. 7
3. (a) What is the difference between Carbon steel and Alloy steels ? 7
- (b) What are the effects of magnesium in alloy steels ? 7

4. (a) Discuss the composition, properties and typical application of any four aluminium alloys. 7
- (b) What are ALPHA brass and ALPHA/BETA brass ? Explain the properties and application of these brass. 7
5. Write short notes on the following : 14
- (i) High speed steel
- (ii) Tool steel
- (iii) High carbon steel
6. (a) Describe the properties and application of the following ceramic materials : 7
- (i) Silicon nitride
- (ii) Sialon
- (b) Describe the molecular structure, properties and application of the following polymeric materials : 7
- (i) Polyethylene terephthalate (PET)
- (ii) Acryl Nitride butadiene styrene
7. (a) Explain the main characteristics and application of abrasive and refractory materials. Also differentiate between these two. 7
- (b) Write short notes on the following : 7
- (i) Reinforced plastics
- (ii) Ceramics
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