

Roll No.

23397

M. E./M. Tech. 1st Semester (CE : SE.)

Examination – June, 2013

MATERIAL SCIENCE

Paper : MTSD-110

Time : Three hours] [Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions. All questions carry equal marks.

1. Define the material science. Explain in detail the classification, important properties, selection factor of materials. 20

2. (a) What is crystalline and no crystalline structure of solid material ? 10
(b) What are crystal planes and directions ? 10

3. Explain the following :
 - (i) Heat treatment of steel. 10
 - (ii) Home rather's rules for the alloys. 10

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4. Write short note on the following :
- (i) General structure of ceramic material. 10
 - (ii) Properties of ceramics. 10
5. Explain in detail the iron-carbon diagram and T.T.T. diagram. 20
6. (a) What are different component of composite material ? 10
- (b) What are different types of plastic ? 10
7. (a) What are different constituents and admixture of cement ? 10
- (b) What is structure property relationship in concrete ? 10
8. Write short note on the following : 20
- (i) Fracture and fatigue.
 - (ii) Radiation damages.