

Roll No

MI - 305**B.E. III Semester**

Examination, June 2015

Engineering Materials**Time : Three Hours****Maximum Marks : 70**

Note: i) Answer five questions. In each question part A, B is compulsory and C part has internal choice. Part A (3 marks) and B (4 marks) part C (7 marks).

ii) All parts of each question are to be attempted at one place.

1. a) Give classification of Engineering materials.
b) What do you mean by structure of a material.
c) Explain the term "Phase Diagram"? Draw a two phase diagram of two different metals.

OR

With the help of a neat diagram, explain IRON-CARBON PHASE DIAGRAM.

2. a) Explain the terms:
i) Types of steels
ii) Properties of steels (any two) .
b) Explain in brief the properties of steels. Give uses of Mild Steel (M.S)
c) Explain the term Heat Treatment. What are various applications of heat treatment in mining industry.

OR

Explain the following:

- i) HARDENING
ii) TEMPERING

3. a) Give types of Ropes used for different purpose.
b) Give criteria for selection of wire ropes.
c) Explain the term Non-stranded ropes.

OR

Write an explanatory note on mass and strength of wire ropes.

4. a) What do you mean by QUICK SETTING CEMENT? Also give its classification.
b) Explain the term R.C.C. What are its applications in mining Industry (any two).
c) What is a Brick Masonry and a stone Masonry. Give any two applications of each.

OR

Explain in detail Applications of FLYASH in mining.

5. a) Give a neat plot of stress strain curve for a ductile material.
b) Sketch a neat diagram of stress strain curve for a brittle material.
c) Explain the phenomenon of CREEP. Also sketch the creep curves and bath tub curve.

OR

Write a detailed note on FATIGUE of a material. "
