

GANPAT UNIVERSITY
B. TECH SEM- IV MARINE ENGINEERING
REGULAR EXAMINATION- APRIL-JUNE 2017
2MR402 ENGINEERING MATERIALS

TIME: 3 HRS

TOTAL MARKS: 60

- Instructions:** (1) This Question paper has two sections. Attempt each section in separate answer book.
(2) Figures on right indicate marks.
(3) Be precise and to the point in answering the descriptive questions.

SECTION: I

- Q.1** (a) Explain the different types of cast iron. (05)
(b) Explain S- curve with suitable diagram. (05)
- OR**
- Q.1** (a) What is non ferrous material? Explain any five non ferrous materials. (05)
(b) Describe the space lattice and crystal structure. (05)
- Q.2** (a) Describe the cooling curve with suitable diagram. (05)
(b) What is the refractoriness? Explain the property of refractoriness. (05)
- OR**
- Q.2** (a) What is fatigue limit? Explain the fatigue mechanism. (05)
(b) Explain Tensile testing of material (05)
- Q.3** Explain the Iron-carbon equilibrium diagram. (10)

SECTION: II

- Q.4** (a) Describe the different types of stainless steel. (05)
(b) What is the meaning of creep? Explain the different types of creep curve. (05)
- OR**
- Q.4** (a) What are different methods of controlling the corrosion of a ship? Explain the sacrificial Anode system of controlling corrosion. (05)
(b) State the properties of Ceramics and its various uses in different industrial products. (05)
- Q.5** (a) What are the properties required for selecting materials for propellers? Write various Materials used for the manufacture of propellers. (05)
(b) State the properties of PTFE (Teflon) and its different uses in various products (05)
- OR**
- Q.5** Explain impressed current system of corrosion protection. What are its advantages? Why reference cell is provided? (10)
- Q.6** Mention the methods of preparing surface for applying protective coatings. Write the paint system for superstructure, waterline and below waterline of a ship. (10)

-----END OF PAPER-----