

3504
BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL - 2019
DIPLOMA IN MECHANICAL ENGINEERING
ENGINEERING MATERIALS
FOURTH SEMESTER EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A (10 x 3 = 30 Marks)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. State the principle of Piezo electric effect?
2. What is a Dendrite? How grain boundary forms?
3. What are the main functions of Coke and Limestone in the blast furnace?
4. Write the Eutectoid reaction in iron Carbon diagram?
5. What is Thermal equilibrium diagram?
6. Distinguish between Hardness and Hardenability of Steel?
7. Write a short notes on Carbonitriding Process?
8. What is Bronze? List various types of Bronzes?
9. Distinguish between Gray cast iron and white cast iron in respect of structures, properties and applications?
10. State the different methods of Producing Metal Powders?

PART - B (5 x 10 = 50 Marks)

Note 1: Answer any five questions and each question carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Explain with a neat sketch how Single shear and Double shear test is conducted?
12. How Space lattices are mainly classified? Explain each with sketches?
- * 13. a) Describe Electric arc furnace with a neat sketch?
b) Distinguish between Acidic and Basic open hearth process?
14. a) Explain Cooling curve of pure iron?
b) Discuss the significance of Equilibrium diagram in study of alloy systems?
15. What is TTT curve and explain it in detail?
16. Describe the composition, properties and applications of
a) Babbit metal b) Permalloy c) Aluminium bronze
17. a) State the advantages of Powder Metallurgy?
b) Explain the Isostatic Moulding and Extruding Process?
- 18A. Write the applications of following Engineering Materials?
a) Lead b) Zinc
- B. Classify steels based on Carbon Content and State their Uses?

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