

PSG POLYTECHNIC COLLEGE, COIMBATORE - 641 004
M12304/D12304 ENGINEERING MATERIALS AND APPLICATIONS
Model Question Paper

Time: 3 Hours

Max. Marks: 100

Instructions:

1. **Group A** and **Group B** questions should be answered in the Main Answer book.
2. Answer any **TEN** questions in **Group A**. Each question carries three marks.
3. Answer **ALL** questions either **(a)** subdivision or **(b)** subdivision in **Group B**. Each question carries 14 marks.

Group – A

Marks: 10 x 3 = 30

1. Distinguish between Crystalline & Amorphous materials
2. Explain with a sketch BCC structure
3. What are the uses of rubber?
4. Mention the various types of iron ore available
5. Write the composition & applications of wrought iron
6. Write the properties & uses of mild steel
7. Discuss the uses of HSS
8. State the purpose of alloying
9. Give the uses of Stainless Steel
10. What are the advantages of using non-ferrous metals in engineering applications?
11. Give the properties and uses of Nickel
12. How is copper extracted? Give its uses
13. Why is heat treatment done?
14. Explain the use of annealing briefly
15. What are the different processes of heat treatment carried on tool steels?

Group– B

Marks: 5 x 14 = 70

16. a) Compare between thermoplastic & thermosetting plastics
(OR)
b) With a neat sketch explain the procedure for producing plastic laminated sheets
17. a) How is steel classified? Give a flow chart & explain
(OR)
b) Explain the properties and uses of medium carbon steel
18. a) Give a detailed account of all the three types of stainless steels
(OR)
b) Illustrate the properties and applications of Molybdenum Alloys

19. a) Describe the composition and uses of Titanium Alloys

(OR)

b) Discuss the Standard Commercial sizes of Non Ferrous Metals.

20. a) What are the different processes of heat treatment carried on tool steels. Explain in brief.

(OR)

b) Write the reasons & explain the process of case hardening

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