MATERIAL SCIENCE IN ENGINEERING

UNIT-3

1. What is the basic difference between heat treatment furnace and metal melting furnace?
2. Describe about different types of Ferrous alloys.
3. Describe about different types of alloys steels.
4. Explain the role of different types of alloying elements in the steel.
5. Describe about different types of Ferrous alloys.
6. Explain with neat sketch about different types of heat treatment furnaces.
7. Classify steel in basis of carbon content.
8. What is cast iron?
9. Explain about different types of iron ore.
10. How you will make pig iron from iron ore?
11. How you will make cast iron?
12. Explain with neat sketch about different types of steel making processes.
13. Explain with neat sketch TTT diagram? What is its utility?
14. What is Normalizing? Explain with neat sketch.
15. What is Annealing or full annealing? Explain with neat sketch.
16. What is process annealing? Explain with neat sketch.
17. What is spherodizing annealing? Explain with neat sketch.
18. Explain different types of hardening processes.
19. What is tempering? Why tempering is required.
20. What is the difference between hardening and hardenability? Describe Jomini quench hardenability test.
21. Explain different types of tempering processes.
22. What is case hardening?
23. Explain different types of case hardening processes.
24. What is Aus tempering?
25. What is Mer tempering?
26. What is the difference between Heat treatment and cold treatment?
27. What are the different ores of Cu? How you will extract Cu from its ore?
28. What are the different ores of Al? How you will extract Al from its ore?
29. What are the different ores of Zn? How you will extract Zn from its ore?
30. What are the different ores of Cr? How you will extract Cr from its ore?

31. What are the different ores of Ni? How you will extract Ni from its ore?
32. Explain about the different alloys of Cu and their applications?
33. Explain about the different alloys of Al and their applications?
34. Explain about the different alloys of Zn and their applications?
35. Explain about the different alloys of Cr and their applications?
36. Explain about the different alloys of Ni and their applications?
37. write short notes on:
    a) Duralumin b) Nichrome c) Babbit metal d) Bell metal e) Gun metal f) Coinage metal g) grain boundary corrosion g) cold working and hot working g) Season cracking (stress corrosion)