

MATERIALS SCIENCE AND ENGINEERING BRANCH

IV SEMESTER - REGULATION 2008

22

ML 9253 NON FERROUS METALLURGY

Time : 3 Hours

Max. Marks : 100

ANSWER ALL QUESTIONS
PART – A (10 X 2 = 20 Marks)

1. Give two applications of pure copper.
2. Why are copper-nickel alloys not strengthened by heat treatment?
3. Give two properties of pure aluminium.
4. What is the phase diagram requirement for age hardening?
5. Give two applications of pure magnesium.
6. What are the two forms and the respective crystal structures of titanium metal?
7. Why does the strength of Ni₃Al increase with increasing temperature?
8. What is galvanizing treatment?
9. Give two properties of pure lead.
10. What is the characteristic feature of Pt-23Co alloy and where it is used?

PART – B (5 x 16 = 80 Marks)

11. i) Give the composition, properties and uses of two Cu-Zn alloys. (8)
ii) Give the composition, properties and uses of two bronzes. (8)
- 12.a) Discuss in detail the age hardening behavior of Al-4% Cu alloy.
(OR)
b) Give the composition, properties and uses of different Al-Li alloys.
- 13.a) i) Give the alloy designation and properties of two different Mg-Al-Zn alloys and one Mg-Al-Mn alloy. (8)
ii) Give the alloy designation and properties of two different Magnesium – Rare Earth – Zinc alloys and one Magnesium – Rare Earth – Zirconium alloy. (8)
(OR)
b) i) Give the properties, composition and uses of two different titanium alloys. (8)
ii) Give the names, properties and uses of two titanium aluminides. (8)
- 14.a) Give the composition, properties and uses of four different nickel alloys.
(OR)
b) i) Briefly explain about nickel aluminides. (8)
ii) Briefly discuss the properties and uses of two different zinc alloys. (8)
- 15.a) Give the properties, composition and uses of two lead alloys and two tin alloys.
(OR)
b) i) Give the properties and uses of pure gold. (6)
ii) Explain the properties, composition and uses three different platinum alloys. (10)