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B.E. / B.Tech. (Full Time) DEGREE ARREAR EXAMINATIONS, APRIL / MAY 2011

MATERIALS SCIENCE AND ENGINEERING BRANCH

FOURTH SEMESTER – (REGULATIONS 2004)

**ML 283 – NON - FERROUS METALLURGY**

Time : 3 hrs

Max Mark: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. What is the effect of chromium in stainless steel?
2. What factors determine the wear-resisting properties of steel?
3. Copper is a suitable material for automobile radiators- Why?
4. How does the addition of lead to brass improve its machinability?
5. Why do most aluminum alloys respond to ageing?
6. Compare Aluminum and Magnesium with regard to corrosion resistance.
7. What are the two crystal structures of Titanium and what is the transformation temperature?
8. Give the composition and properties of Invar.
9. Why not zinc coated steel used for tin-cans?
10. Which of the platinum metals has the highest corrosion resistance?

Part – B (5 x 16 = 80 Marks)

11. a. Discuss the important properties, composite applications and limitations of Ferritic, Austenitic, Martensitic, Precipitation hardenable stainless steels.
12. a. Discuss the effect on corrosion resistance of copper by increasing additions of Zinc, tin and Nickel.

(OR)

- b. Write a brief note on the composition, properties and applications of Cu-Zn alloys, Cu-Sn alloys and Cu-Al alloys.

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