

MATERIALS SCIENCE AND ENGINEERING BRANCH**V SEMESTER - REGULATION 2008****ML 9306 – CORROSION AND SURFACE ENGINEERING**

Time : 3 Hours

Max. Marks : 100

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

(12)

1. Give the mathematical expression for corrosion rate and Label all terms in it.
2. Define Pilling – Bedworth ratio.
3. What is polarization?
4. Define Flade Potential.
5. Define dealloying.
6. Give two differences between atmospheric corrosion and pitting corrosion.
7. Give two purposes of corrosion testing.
8. Give two advantages of ASTM standards for corrosion testing.
9. Define cathodic protection.
10. What is anodizing?

PART – B (5 x 16 = 80 Marks)

11. i) Briefly explain about adhesive wear and abrasive wear. (4)
- ii) Discuss in detail about pitting corrosion. (12)
- 12.a) Discuss in detail about concentration polarization and activation polarization. (OR)
- b) i) Briefly explain about passivity. (4)
- ii) Discuss in detail about theories of passivity. (12)
- 13.a) Discuss in detail about stress corrosion cracking. (OR)
- b) Discuss in detail about high temperature oxidation.
- 14.a) Explain in detail about susceptibility tests for intergranular corrosion. (OR)
- b) Explain in detail about susceptibility tests for stress corrosion.
- 15.a) Discuss in detail about metallic, organic and inorganic coatings. (OR)
- b) Write short notes on ion implantation and plasma spray coating.