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BE /B.Tech(Full Tme) DEGREE END SEMESTER EXAMINATION – APRIL/MAY 2011

MATERIAL SCIENCE ENGINEERING BRANCH

FIFTH SEMESTER - (REGULATION 2004)

ML 376 CORROSION AND SURFACE ENGINEERING

13

Time : 3 hr

Max. Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. Classify the different types of corrosion.
2. What are factors affecting galvanic corrosion?
3. Write down the expression for corrosion rate.
4. Draw the Pourbaix diagram for magnesium
5. What is intergranular corrosion?
6. What are the characteristics of filiform corrosion?
7. What are the purposes of corrosion testing?
8. How do you evaluate pitting corrosion?
9. Classify the different types of corrosion inhibitor.
10. What is Ion plating and Ion implantation?

Part-B (5 X 16 = 80 Marks)

11. Explain the different types of wear encountered in engineering application. (16)
12. a. Discuss the different types of polarization with neat sketch. (16)
(Or)
b. Discuss about the electrochemical behavior of active/passive metals. (16)
13. a i) Explain the galvanic corrosion in detail (8)
(ii) Describe the mechanism of fretting corrosion. (8)
(Or)
b. (i) Explain the methods of evaluating corrosion failures (8)
(ii) Discuss high temperature corrosion in detail (8)
14. a. Explain the stress corrosion testing procedure. (16)
(Or)
b. Discuss any four types of ASTM standard for corrosion testing. (16)
15. a. Explain the various types of corrosion prevention methods. (16)
(Or)
b. Discuss any one CVD technique with sketch. (16)