

Printed Pages : 2



ECH-042

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 151756**

Roll No.

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**B. Tech.**(SEM. VII) (ODD SEM.) THEORY  
EXAMINATION, 2014-15**CORROSION SCIENCE AND ENGINEERING**

Time : 3 Hours]

[Total Marks : 100

- 1 Attempt any four parts : 5×4=20
- What is corrosion and explain why do we give importance to corrosion.
  - Discuss the Emf and Galvanic series.
  - Elaborate the causes of corrosion.
  - Write the applications and limitations of pourbaix diagram.
  - Discuss the effects of oxygen and alloying on oxidation rates.
  - Explain anodic passivation.
- 2 Attempt any two parts : 10×2=20
- Explain stress corrosion cracking and its mechanism in stainless steel.
  - Elaborate theory of pitting and principle ways to avoid pitting corrosion.
  - Discuss the corrosion process and control methods in petrochemical industry.

- 3** Attempt any two parts : **10×2=20**
- a) Elaborate the factors influencing corrosivity of the atmosphere and remedial measures.
  - b) Explain the effect of dissolved salts concentration on corrosion in aqueous environment.
  - c) Write short notes on
    - i) Corrosion process in soil
    - ii) Classification of atmospheric corrosion.
- 4** Attempt any two parts : **10×2=20**
- a) Discuss cathodic protection and its combined use with coatings.
  - b) Explain boiler-water treatment for cohesion control.
  - c) Elaborate the design aspects in corrosion prevention and corrosion resistant materials.
- 5** Attempt any two parts : **10×2=20**
- a) Describe laboratory corrosion tests and accelerated chemical tests for studying different forms of corrosion.
  - b) Explain corrosion monitoring methods.
  - c) Discuss chemical removal of corrosion products.
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