

Assignment 3

1. What is galvanic corrosion?
2. Explain effects of following factors on galvanic corrosion:
(a) area factor, (b) distance effect, (c) purity of electrolyte and (d) resistance of electrolyte.
3. Show important steps of crevice and pitting corrosion.
4. Pitting corrosion is more dangerous than uniform corrosion: why?
5. Dealloying can be advantageous: How? (Please see making of porous structure in internet).
6. What are sensitization and stabilization of stainless steel?
7. Even stabilized stainless steel can be prone to intergranular corrosion: How?
8. Lead is resistant in dilute H_2SO_4 , but, corrosion resistance decreases once concentration of H_2SO_4 increases. Why?
9. Show with proper illustration:
 - (a) Fretting corrosion
 - (b) Cavitation damage
10. Time to failure is an important parameter to judge stress corrosion behavior of metals and alloys: Why?
11. What are major differences between stress corrosion cracking and corrosion fatigue?
12. What are major differences between: Hydrogen blisters and hydrogen embrittlement.
13. What is active path mechanism for stress corrosion?
14. What are general preventive measures for stress corrosion cracking?
15. Shot pinning is sometimes helpful for better corrosion protection: why?