

Answer the following questions:

1-

a. write what you know about :

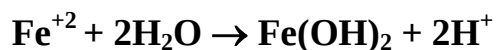
- Atmospheric corrosion
- Dezinification and parting corrosion
- Anodic corrosion control
- Effect of oxygen on the corrosion rate

b. (in Volts) in deaerated water of pH= 7 .Assume corrosion products : H_2 and $Ni(OH)_2$, the solubility product (k_{sp}) of which is 2.0×10^{-16} ,and $E^0_{Ni/Ni^{+2}} = -0.25V$.

2-

a. Explain the thermodynamic approach on the corrosion reactions , Confirm by examples.

b. Calculate E^0 for the following reaction :



The stander chemical potentials for the species involved in (kJ) are :

$Fe^{+2} = -20310$, $H_2O = -5650$, $Fe(OH)_2 = -115200$ and $H^+ = 0.0$

The (F) Faraday is 96500 Coloum, at what pH the equilibrium is found.

3-

- a. Discuss the adsorption theory to explain the corrosion and corrosion prevention, use the adsorption inhibitors as an important source of inhibitors
- b. Electrolytic process by anodizing to protect metals from corrosion

Good Luck

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