WET (OR) ELECTROCHEMICAL CORROSION

2 CONDITIONS

- When 2 dissimilar Metals /alloys contact with each other in Aq. Soln. / moisture.
- Metal exposed to varying conc. of O_2/ any electrolyte.

Mechanism (Under the above condition)

At anode: M $\longrightarrow$ M2+ +ne-

At Cathode:

Acidic Condition $2H^+ + 2e^- \longrightarrow H_2$ (Reduction)

Basic/Neutral Condition $\frac{1}{2} O_2 + H_2O + 2e- \longrightarrow 2OH-$ (reduction)

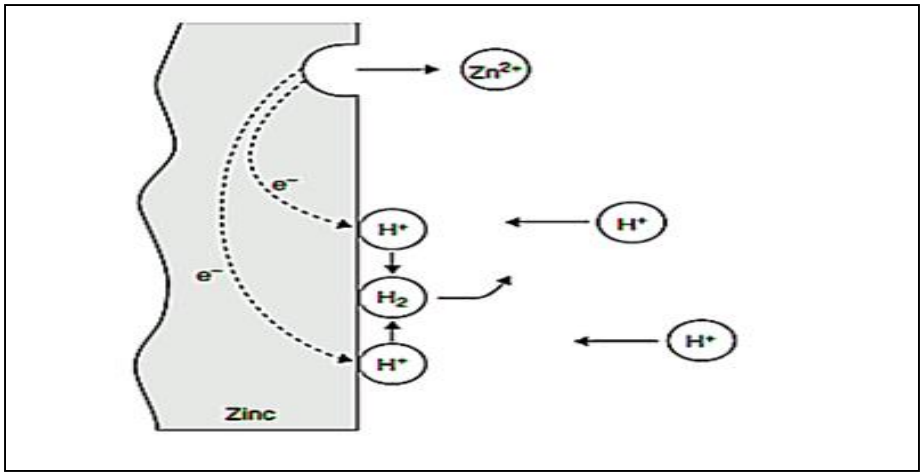
EVOLUTION OF HYDROGEN

- At Anode: Metal liberates electrons.

$$Fe \longrightarrow Fe^{2+} + 2e^{-} \text{ (Oxidation)}$$

- At Cathode: electrons gained from anode and forming forming

$$2H^{+} + 2e^{-} \longrightarrow H_2 \text{ (Reduction)}$$



ABSORPTION OF OXYGEN

- At Anode: Metal liberates electrons.

$$Fe \longrightarrow Fe^{2+} + 2e^{-} \text{ (Oxidation)}$$

- At Cathode: electrons gained from anode and forming forming

$$\tfrac{1}{2} O_2 + H_2O + 2e^{-} \longrightarrow 2OH^{-} \text{ (reduction)}$$