DPP–11 [Batteries and Corrosion]

Chapter: Electrochemistry

"Great results are not built in one day. They are built in quiet moments like this — when you choose to sit and try again. Start with Question 1."

TYPE–1 : Battery Components & Structure

1. **In lead storage battery, cathode is made up of** **[NCERT Pg. 89]**
   (1) Pb grid packed with PbO_2
   (2) Pd plates
   (3) Platinum
   (4) Zinc plates
2. **In a mercury cell, product at anode is** **[NCERT Pg. 88]**
   (1) HgO(s) (2) Hg(l)
   (3) ZnO(s) (4) Zn(Hg)
3. **Which of the following is secondary cell?**
   (1) Dry cell
   (2) Mercury cell
   (3) Lead storage battery
   (4) All of these

TYPE–2 : Electrochemical Reactions in Batteries

4. **The chemical species undergoing reduction in dry cell is**
   (1) Zn (2) NH_4^+
   (3) MnO_2 (4) NH_3
5. **The net reaction in Ni–Cd cell is**
   (1) $Cd + {}_2Ni(OH)_3 \longrightarrow CdO + {}_2Ni(OH)_2 + H_2O$
   (2) $Ni(s) + {}_2Cd(OH)_3 \longrightarrow NiO + {}_2Cd(OH)_2 + H_2O$
   (3) $Cd + Ni^{2+} \longrightarrow Cd^{2+} + Ni$
   (4) $Ni + Cd^{2+} \longrightarrow Ni^{2+} + Cd$
6. **Rusting on the surface of iron involves**
   (1) $Fe(s) \longrightarrow Fe^{2+}(aq) + {}_2e^-$(atanodicsite)
   (2) $O_2(g) + {}_4H^+(aq) + {}_4e^- \longrightarrow {}_2H_2O(l)$(atcathodicsite)
   (3) ${}_4Fe^{2+}(aq) + O_2(g) + {}_4H_2O(l) \longrightarrow {}_2Fe_2O_3(s) + {}_8H^+$
   (4) All of these
7. **When a lead storage battery is recharged**
   (1) Pb is formed (2) H_2SO_4 is formed

(3) H_2SO_4 is consumed (4) Both (1) & (2)

8. **Which of the following reactions occurs at the cathode?**
   (1) $_2OH^- \longrightarrow H_2O + O + {}_2e^-$ (2) $Zn \longrightarrow Zn^{2+} + {}_2e^-$
   (3) $Sn^{2+} \longrightarrow Sn^{4+} + {}_2e^-$ (4) $Cu^{2+} + {}_2e^- \longrightarrow Cu$

TYPE–3 : Corrosion & Protection Methods

9. **In electrochemical corrosion of metals, the metal undergoing corrosion**
   (1) Acts as anode
   (2) Acts as cathode
   (3) Is reduced
   (4) Either of these
10. **The most convenient method to protect the bottom of ship made of iron is**
   (1) Coating it with red lead oxide
   (2) White tin plating
   (3) Connecting it with Mg block
   (4) Connecting it with Pb block
11. **To protect iron against corrosion, the most suitable metal plating on it, is**
   (1) Copper plating
   (2) Zinc plating
   (3) Nickel plating
   (4) Tin plating

TYPE–4 : Electrorefining & Cell Terminals

12. **In the electrorefining of metals, impure metal is**
   (1) Cathode and oxidation takes place (2) Anode and oxidation takes place
   (3) Anode and reduction takes place (4) Cathode and reduction takes place
13. **Select the correct statement**
   (1) Cathode is negative terminal, both in galvanic and electrolytic cells
   (2) Anode is negative terminal, both in galvanic and electrolytic cells
   (3) Cathode is negative terminal in electrolytic cell and anode is negative terminal in galvanic cell
   (4) Cathode and anode respectively are negative and positive terminal in galvanic and electrolytic cell respectively