

Daily Tutorial Sheet-9

Level-2

106.(A) $Mn^{7+} + 5e^- \rightarrow Mn^{2+}] \times 3$

$$Fe^{2+} \rightarrow Fe^{3+} + e^{-}$$
 $C_2O_4^{2-} \rightarrow 2CO_2 + 2e^{-}$
 $\times 5$

3 moles of $KMnO_4 = 5$ moles of FeC_2O_4

 $\therefore 1 \text{ mol of ferrous oxalate } \equiv \frac{3}{5} \text{mol of KMnO}_4$

107.(A) Meq. of $KMnO_4 = Meq.$ of FeC_2O_4

108.(B) Meq. of HNO₃ = Meq. of Fe²⁺ or $3 \times 3 \times V = \frac{8}{56} \times 1000$ V = 15.87 mL

$$(\overset{\scriptscriptstyle{+5}}{\mathsf{N}}\,\mathsf{O}_3^-\to \overset{\scriptscriptstyle{2+}}{\mathsf{NO}})$$

109.(C) Meq. of $H_2S = Meq.$ of Cu^{2+}

$$\therefore \frac{W_{H_2S}}{34/2} \times 1000 = \frac{64.5}{63.5/2} \times 1000 \quad \therefore \quad W_{H_2S} = 34gm$$

110.(BCD)

Option (A) is a double displacement reaction which is not a redox reaction.

111.(ABCD)

$$3Br_2 + 6HO^- \longrightarrow 5Br^- + BrO_3^- + 3H_2O$$
; $5Br^- + BrO_3 + 6H^+ \longrightarrow 3Br_2 + 3H_2O$

Addition of H₂SO₄ shift reaction in reverse direction.

So, bromine is getting oxidised as well as reduced.

112.(AD) 40g NaOH \equiv 1 equivalent of base

$$\therefore$$
 1 mole $H_3PO_x = 1$ equivalent of acid, for $x = 2$

 \Rightarrow 1 mole H_3PO_x provides 1 mole of 4^+ ions, do not form acidic salts.

113.(C) It's a comproportiation reaction w.r.t H

114.(C)
$$Hg_2Cl_2 + NH_3 \longrightarrow Hg(\ell) + HgNH_2Cl + NH_4Cl$$

So,
$$Hg_2^{2+} \longrightarrow Hg + Hg^{2+}$$

In a disproportionation reaction, species undergoes both oxidation and reduction.

$$\begin{array}{ll} \textbf{115.(C)} & \operatorname{SnCl}_2 + 2\operatorname{HgCl}_2 \longrightarrow \operatorname{Hg}_2\operatorname{Cl}_2 \downarrow + \operatorname{SnCl}_4 \; ; \qquad & \operatorname{Hg}_2\operatorname{Cl}_2 + \operatorname{SnCl}_2 \longrightarrow 2\operatorname{Hg} \downarrow + \operatorname{SnCl}_4 \\ & \text{white ppt} \end{array}$$