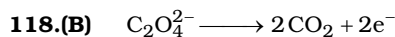


117.(A) Due to the pressure of oxygen, Fe^{2+} readily gets oxidised to Fe^{3+}



$$\therefore E_{\text{Na}_2\text{C}_2\text{O}_4} = \frac{134}{2} = 67 \text{ g}$$

$$\text{Normality} = \frac{3.2}{500} \times 1000 = 0.096 \text{ N}$$

119.(B) meq of $\text{K}_2\text{Cr}_2\text{O}_7 = 1 \text{ meq}$ in 50 mL

\therefore In 500 mL, meq of ferrous ammonium sulphate = 10 meq

$$\Rightarrow 10 = \frac{g}{392} \times 1000 \quad [\text{As } n\text{-factor} = 1]$$

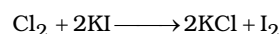
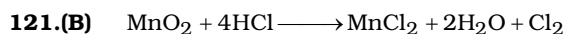
$$\Rightarrow g = 3.92 \text{ grams}$$

120.(C) Amount of ferrous ammonium sulphate reacted with pyrolusite (MnO_2) = $20 - 3.92 = 16.08 \text{ g}$

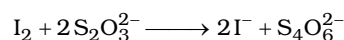
$$\text{or, number of equivalent of } \text{MnO}_2 = \frac{16.08}{392} = 0.041$$

$$\therefore 0.041 = \frac{x}{\frac{87}{2}} \quad [\text{n-factor for } \text{MnO}_2 = 2]$$

$$\Rightarrow x = 1.781 \quad \therefore \% \text{ purity} = \frac{1.781}{3} \times 100 = 59.4\%$$



Reaction involved



$$\therefore \text{Number of m moles of } \text{I}_2 = \frac{30 \times 0.1}{2} = 1.5 \text{ m moles}$$

So, m moles of $\text{Cl}_2 = 1.5 \text{ m moles}$

m moles of $\text{MnO}_2 = 1.5 \text{ m moles}$

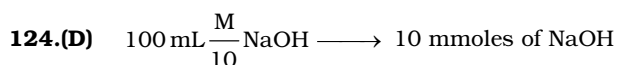
$$\Rightarrow \frac{1.5}{1000} = \frac{g}{87} \quad \Rightarrow \text{Amount of } \text{MnO}_2 = 0.1305 \text{ g}$$

$$\% \text{ of } \text{MnO}_2 = \frac{0.1305}{0.5} \times 100 = 26.1\%$$

122.(C) HCl can act as a reducing agent & thereby interfering with the titration.

Similarly, HNO_3 is a good oxidising agent.

123.(C) $\frac{1.34}{\frac{134}{2}} = V \times \frac{5}{10} \quad \Rightarrow \quad V = \frac{1}{25} \text{ L} = 40 \text{ mL}$



This can neutralise $\longrightarrow 5 \text{ mmoles of } \text{H}_2\text{C}_2\text{O}_4$ or 5 mmoles of H_2SO_4

125.(A) Number of equivalents of oxalate = Number of equivalents of $\text{KMnO}_4 = \frac{250}{1000} \times \frac{5}{10} = \frac{1}{8}$

$$\Rightarrow \frac{1}{8} = \frac{g}{\frac{88}{2}} \Rightarrow g = 5.5 \text{ gram} \quad \therefore \% \text{ purity} = \frac{5.5}{10} \times 100 = 55 \%$$