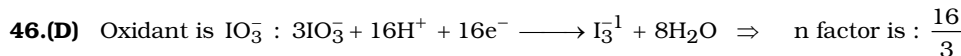
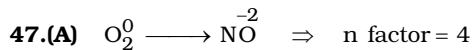


Daily Tutorial Sheet-4	Level-1
-------------------------------	----------------

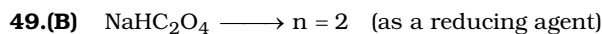
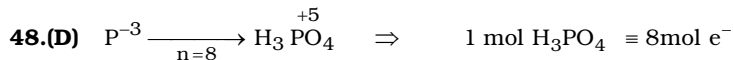


In (A) : n factor = 1 ; (B) n factor = 1 ; (C) n factor = 3



\Rightarrow gmeq of O_2 in 1.0 moles of $\text{O}_2 = 4 \times 1 = 4$

Since gmeq of $\text{O}_2 =$ gmeq of $\text{NH}_3 = 4$



So, $0.1 \times 2 = 0.2 \text{ N NaHC}_2\text{O}_4$ as a RA.

50.(A) Fluorine more reactive than MnO_2 , and is a very strong oxidizing agent.

51.(C) Let M be the molarity of $\text{NaHC}_2\text{O}_4 \xrightarrow[n=2]{n=1}$ as an acid
 $\xrightarrow[n=2]$ as a reducing agent.

With KMnO_4 : $100 \times M \times 2 = 50 \times 0.1 \times 5 \Rightarrow M = \frac{1}{8}$

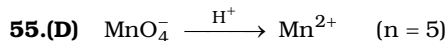
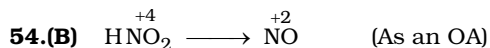
With NaOH : $\frac{1}{8} \times 1 \times 100 = 0.1 \times 1 \times V_{\text{mL}} \Rightarrow V_{\text{mL}} = 125 \text{ mL}$

52.(B) meq of $\text{H}_2\text{O}_2 =$ meq of MnO_4^- [n factor of $\text{H}_2\text{O}_2 = 2$; n factor of $\text{MnO}_4^- = n$]

$\Rightarrow 2 \times 0.1 \times 24 = n \times 0.1 \times 16 \Rightarrow n = 3$

$\therefore \text{MnO}_4^- \xrightarrow[n=3]{+7} \text{MnO}_2^{+4}$ (We can observe that medium must have been dilute alkaline).

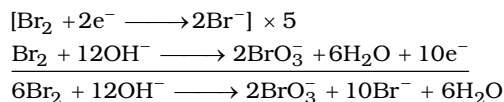
53.(D) Learn as a fact.



56.(C) Find n factor using standard result : $\frac{1}{n} = \frac{1}{n_1} + \frac{1}{n_2} = \frac{1}{2} + \frac{1}{10} = \frac{6}{10} = \frac{3}{5} \Rightarrow n = \frac{5}{3}$

Hence equivalent weight = $\frac{M}{5/3} = \frac{3M}{5}$

Alternatively, equivalent weight can also be calculated as follows.



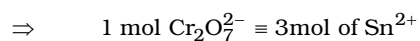
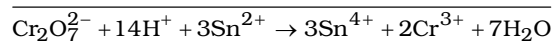
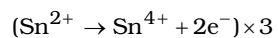
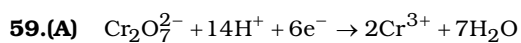
Observe that 10 mol of electron are involve per 6 moles of Br_2 . \Rightarrow n factor = $\frac{10}{6} = \frac{5}{3}$

57.(B) g meq of $\text{KHC}_2\text{O}_4 =$ gmeq of KMnO_4

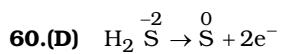
$2 \times x = 5 \times 0.02 \times \frac{100}{1000} \Rightarrow x = 0.005 \text{ mol.}$ [n factor of KHC_2O_4 as RA = 2 ; of $\text{KMnO}_4 = 5$]



Reduction



It is clear from this equation that 3 moles of Sn^{2+} reduce one mole of $\text{Cr}_2\text{O}_7^{2-}$, hence 1 mol. of Sn^{2+} will reduce $\frac{1}{3}$ moles of $\text{Cr}_2\text{O}_7^{2-}$.



Equivalent wt. = $\frac{\text{Mol. wt.}}{2} = \frac{34}{2} = 17.$