

D. B. College. (Jyngar) Lect-11

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Equivalent Concept :-

$$\text{no. of. eq.} = \frac{W}{E} = N \times V(L)$$

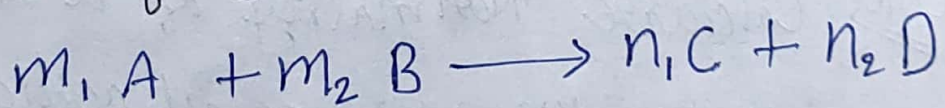
or

$$\text{g. eq.} \quad E = \frac{M}{n\text{-factor}}$$

$$\text{g. eq.} = \frac{W}{\frac{M}{n\text{-factor}}} = n \times n\text{-factor}$$

$$\text{g. eq.} = \frac{W}{E} = n \times n\text{-factor} = NV(L)$$

Law of Chemical Equivalence :-



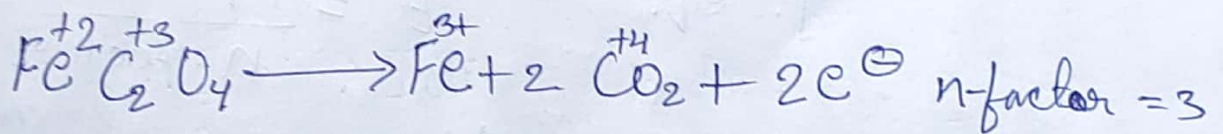
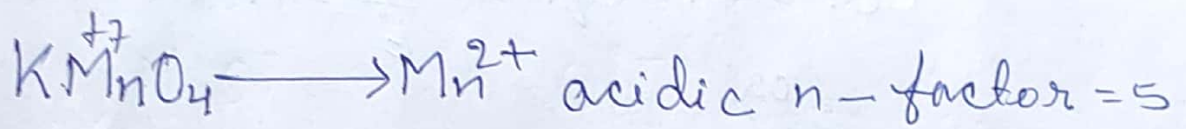
$$\text{g. eq. of A} = \text{g. eq. of B} = \text{g. eq. of C}$$

$$= \text{g. eq. of D}$$

$$\boxed{\text{g. eq. of O.A.} = \text{g. eq. of R.A.}}$$

Note: If g. eq. of O.A. & R.A. are given then Compd. which have less no. of g. eq. is C/A Limiting Reagent.

Ques Find no. of moles of  $\text{KMnO}_4$  required to oxidise 2 moles of ferrous oxalate in acidic medium.



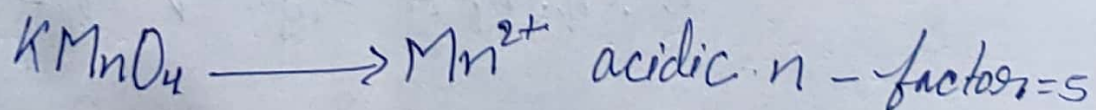
$$\text{g. eq. of } \text{KMnO}_4 = \text{g. eq. of } \text{C}_2\text{O}_4^{2-}$$

$$n \times 5 = 3 \times 2$$

$$n = \frac{6}{5}$$

$$n = 0.8$$

Ques Calculate Normality of a sol<sup>n</sup> containing 15.8g  $\text{KMnO}_4$  in 50 ml acidic sol<sup>n</sup>.



$$N = \frac{\text{No. of g. eq.}}{V} = \frac{15.8}{158} \times \frac{5}{50} \times 1000$$

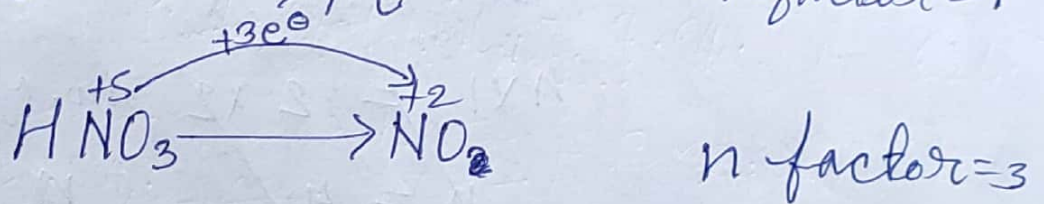
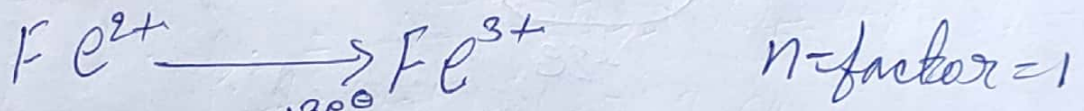
$\text{KMnO}_4$  acidic  $n$ -factor = 5

$$N \times n\text{-factor} = N \times V(L)$$

$$\frac{158}{158} \times \frac{5}{10} = N \times \frac{50}{1000} \times 20$$

$$N = 10N$$

Ques Find Vol<sup>n</sup> of  $2\text{M HNO}_3$  required to convert 8g ferrous ion to ferric ion if  $\text{HNO}_3$  is converted to  $\text{NO}$  molecule.



$$g.\text{eq. of } \text{HNO}_3 = g.\text{eq. of } \text{Fe}^{2+}$$

$$M \times n\text{-factor} \times V = n \times n\text{-factor}$$

$$2 \times 3 \times V = \frac{8}{56} \times 1$$

$$V = \frac{8}{56 \times 6}$$