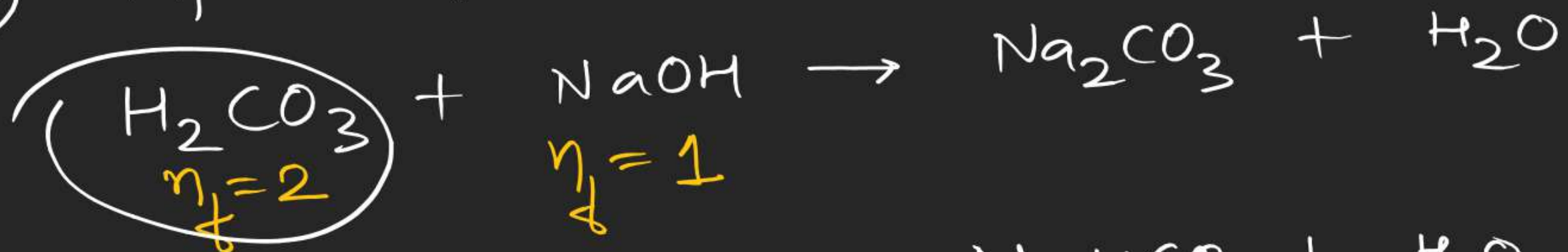


n-factor calculation :-

① For non-redox Rxn

(a) n-factor for acid and base



n-factor = no. of H^+ or OH^- given/taken by per mole acid or base.

If Chemical Rxn is not given

n -factor of acid/base = basicity or acidity

	n -factor
H_3PO_4	3

H_3PO_3	2
-------------------------	---

H_3PO_2	1
-------------------------	---

H_2SO_4	2
-------------------------	---

CH_3COOH	1
--------------------------	---



$\swarrow \searrow$
 $x \text{ mol} \quad y \text{ mol}$

$$\underline{\text{basicity}} \times \underline{x} = y \times \underline{\text{acidity}}$$

(A) $x = 2y$

(B) $2x = y$

(C) $x = y$

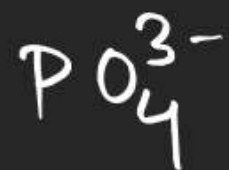
Acid \rightarrow basicity $\rightarrow \text{H}^+$ given

base \rightarrow acidity $\rightarrow \text{OH}^-$ given

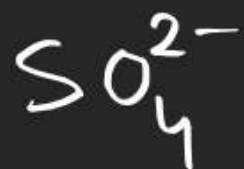
② n-factor for the ion

n-factor = charge on ion

n-factor



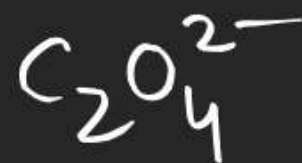
3



2



1



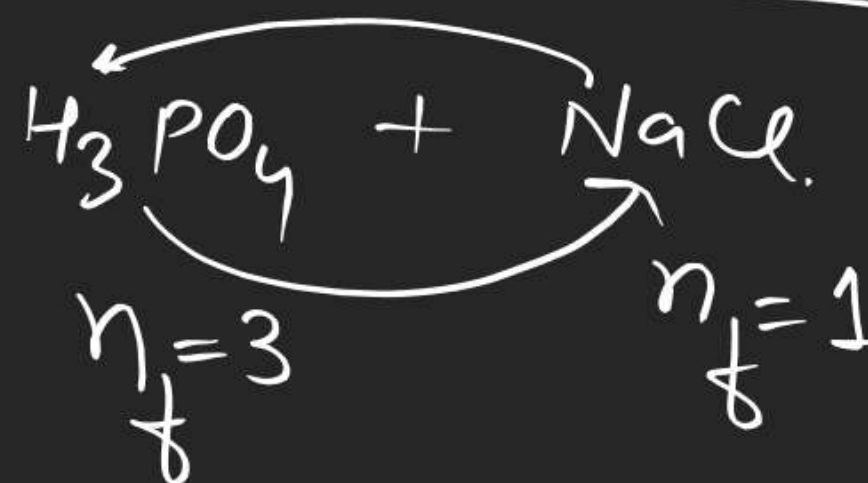
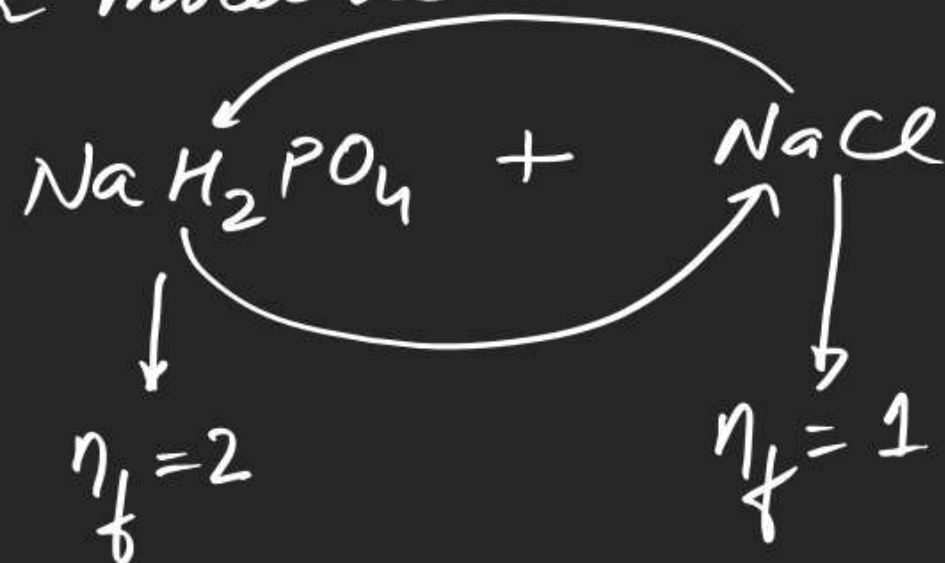
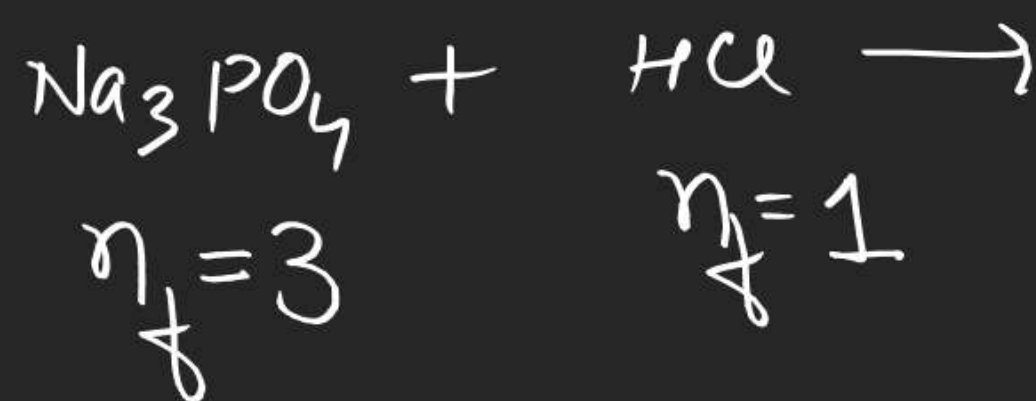
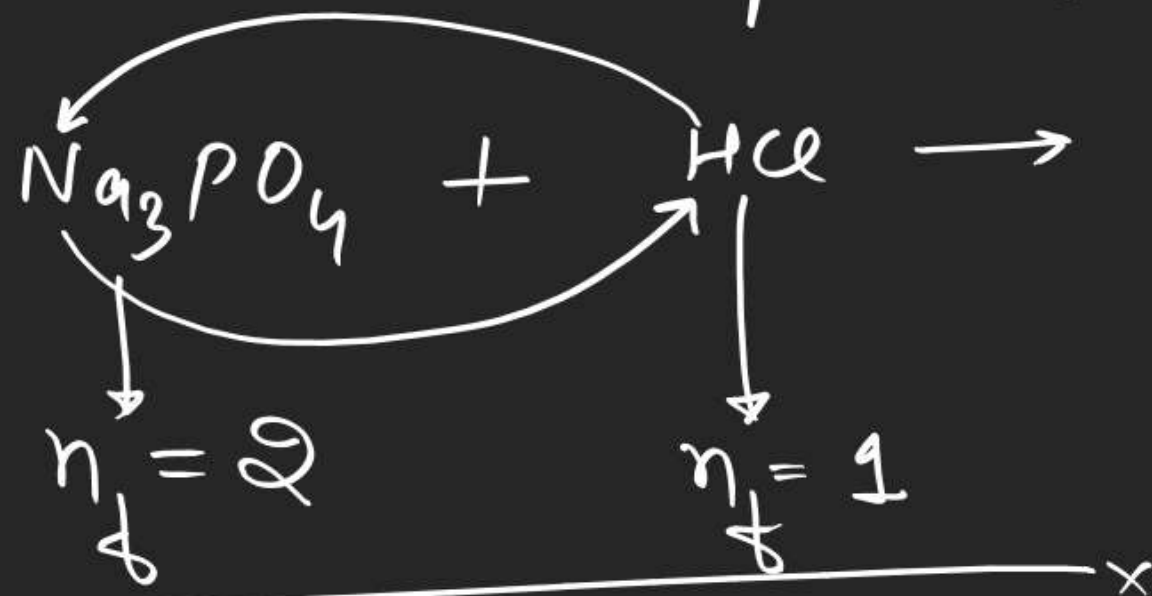
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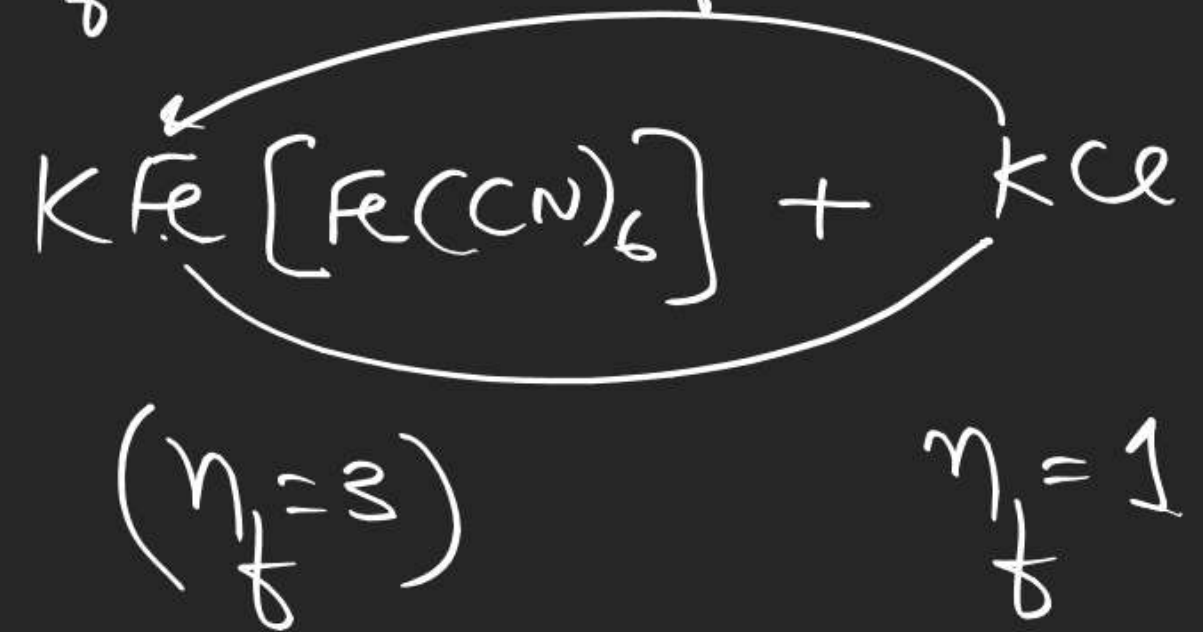
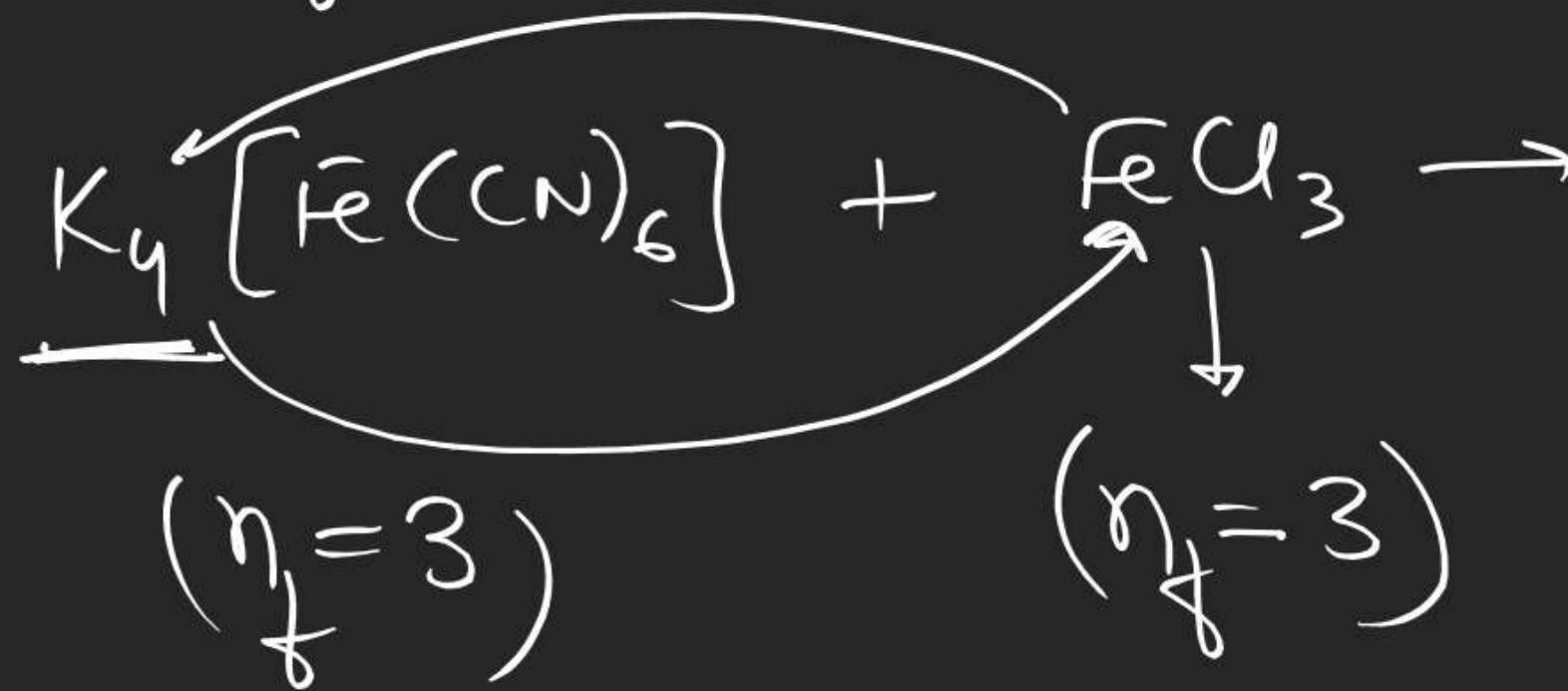
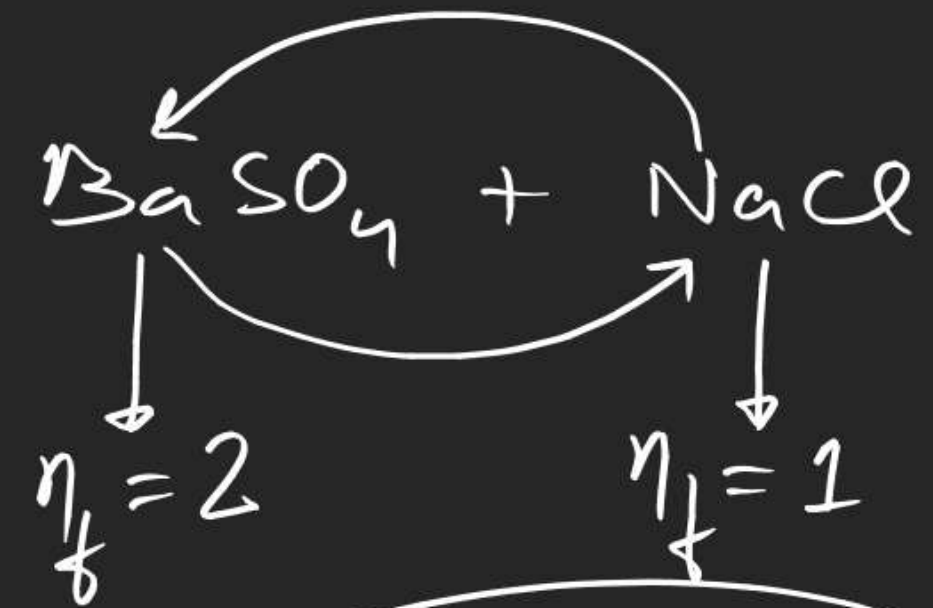
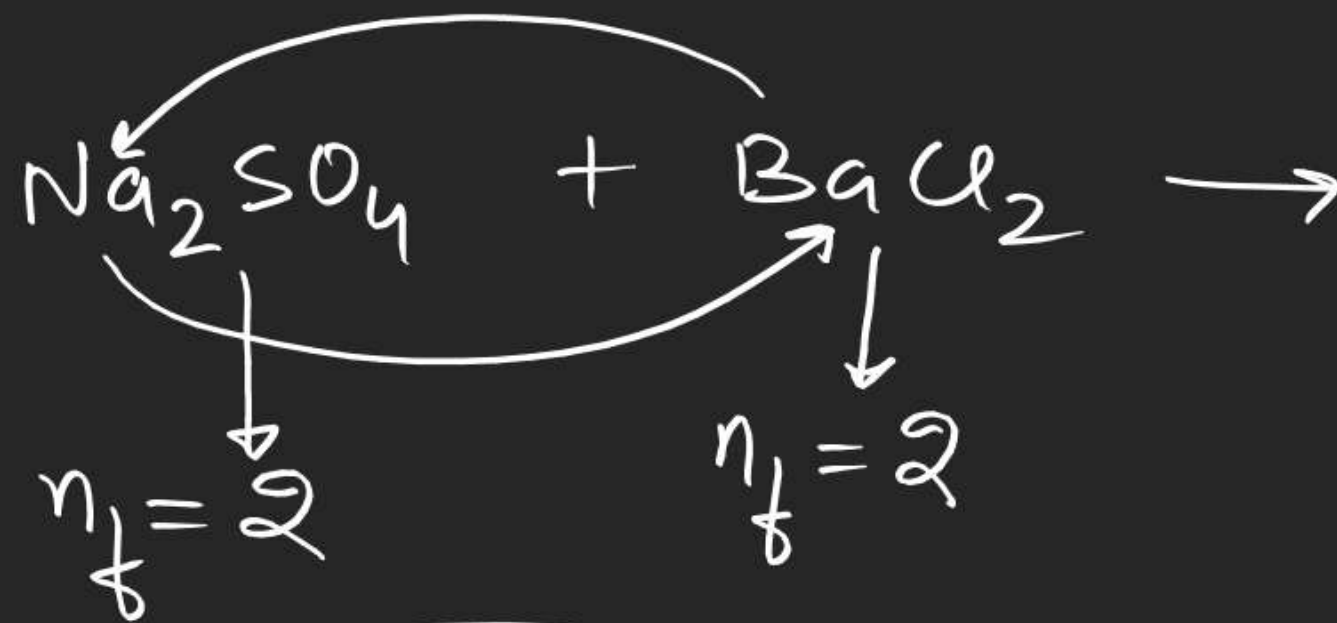


1

③ n-factor compound

$n\text{-factor} = \frac{\text{Total charge on cation or anion displaced per molecule.}}$

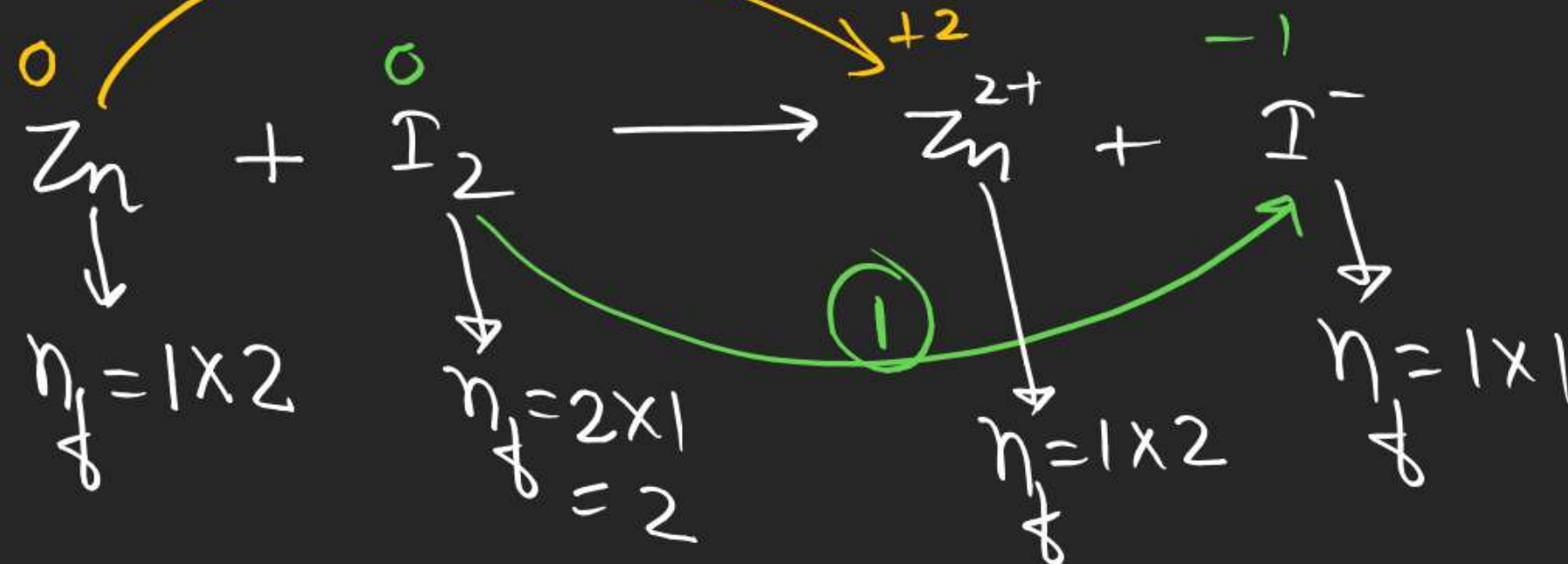
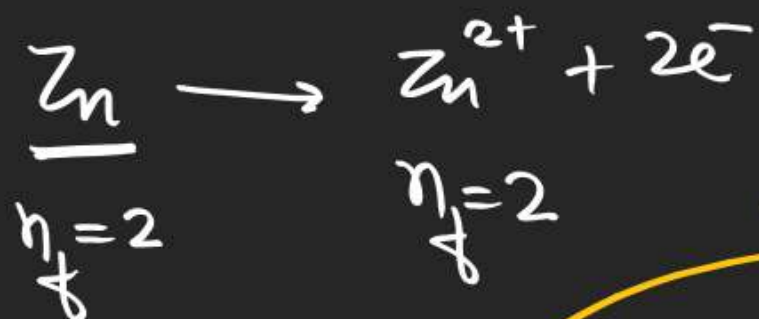


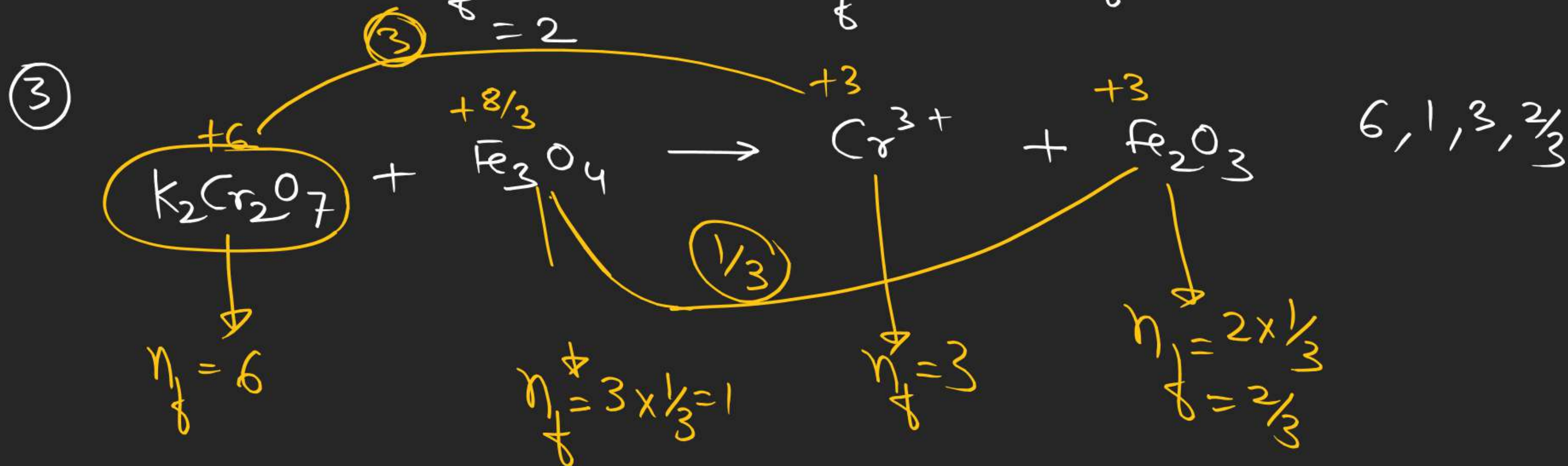
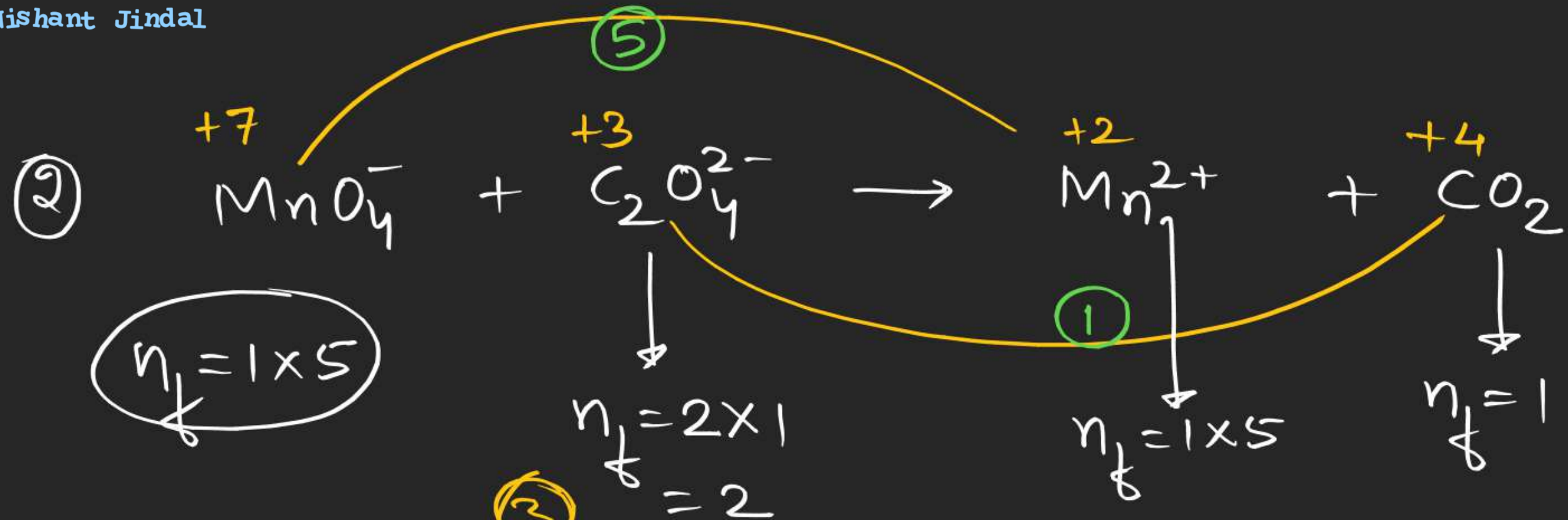


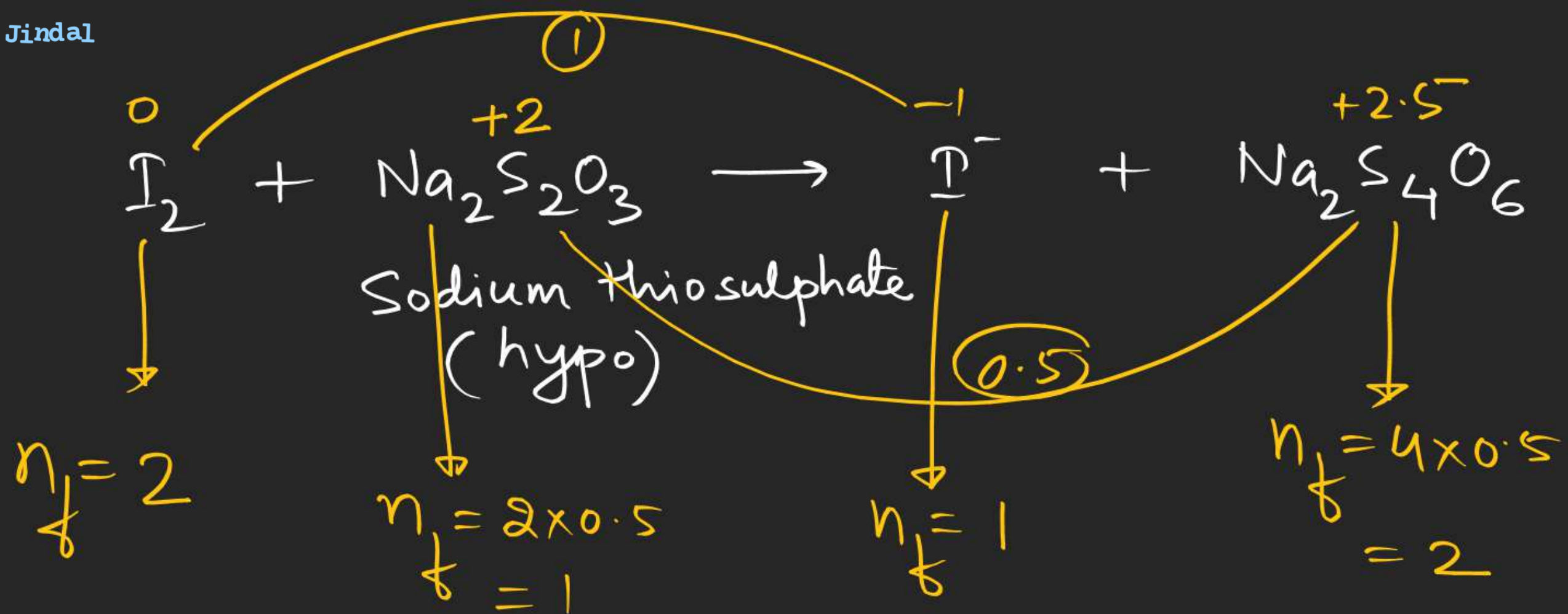
② for redox Rxn

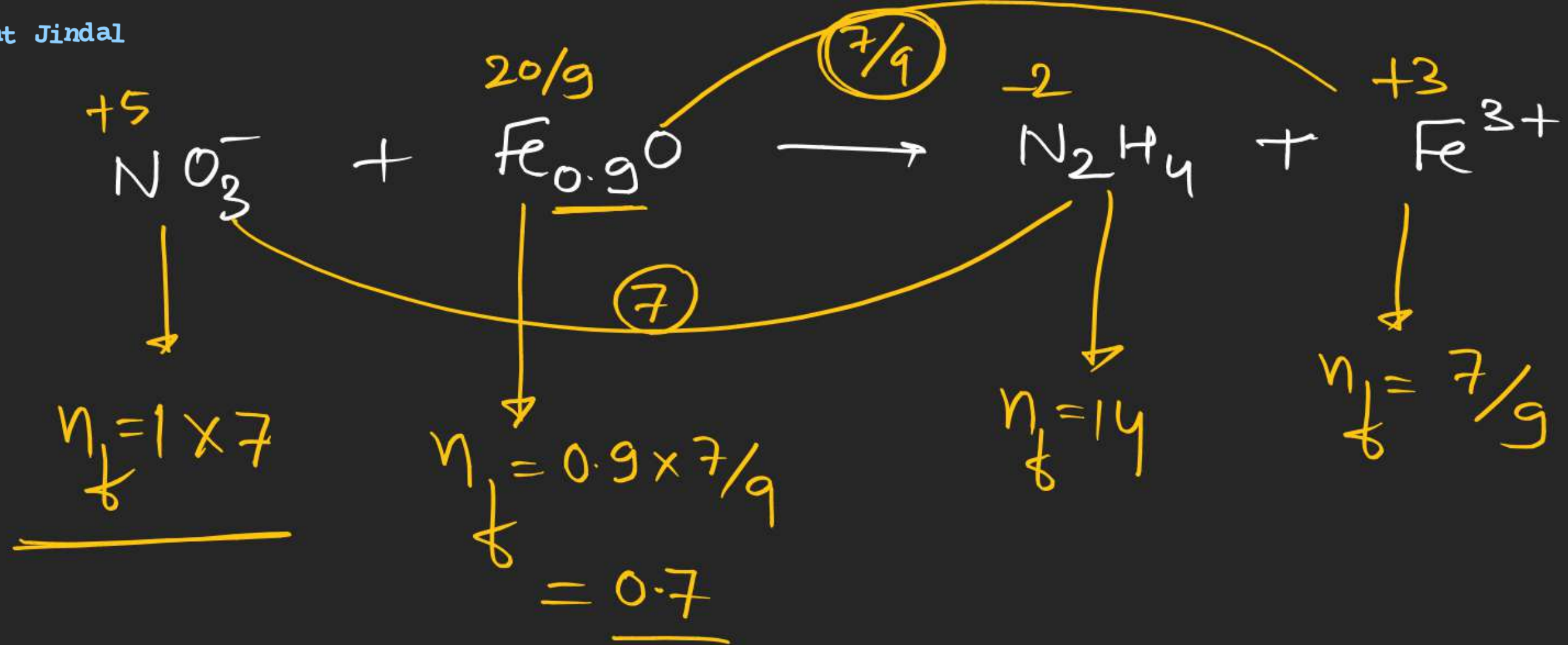
n -factor = no. of e^- exchanged per mole of substance

Type-1 Rxn: \rightarrow Rxns in which ^{only} one element undergoes oxidⁿ and one other element in other compound undergoes redⁿ.









7, 0.7, 14, 7/9

$$\text{Normality (N)} = \frac{\text{no. of equivalents}}{\text{Volume (lit)}}$$

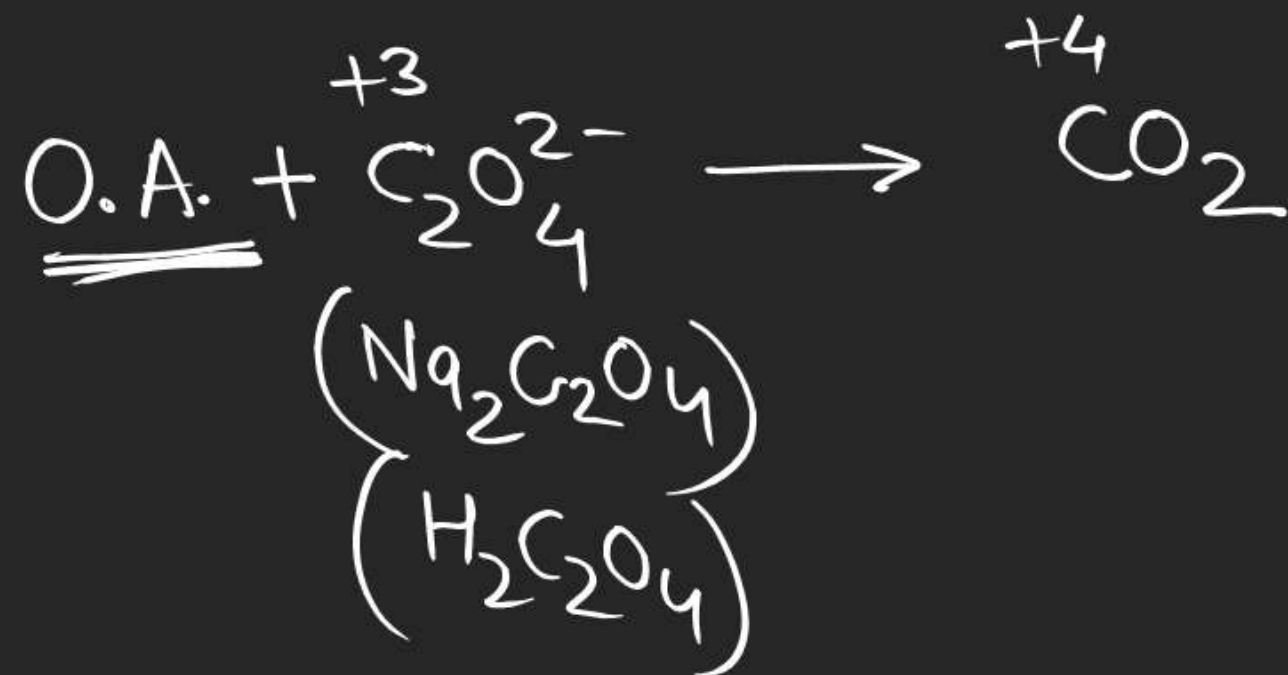
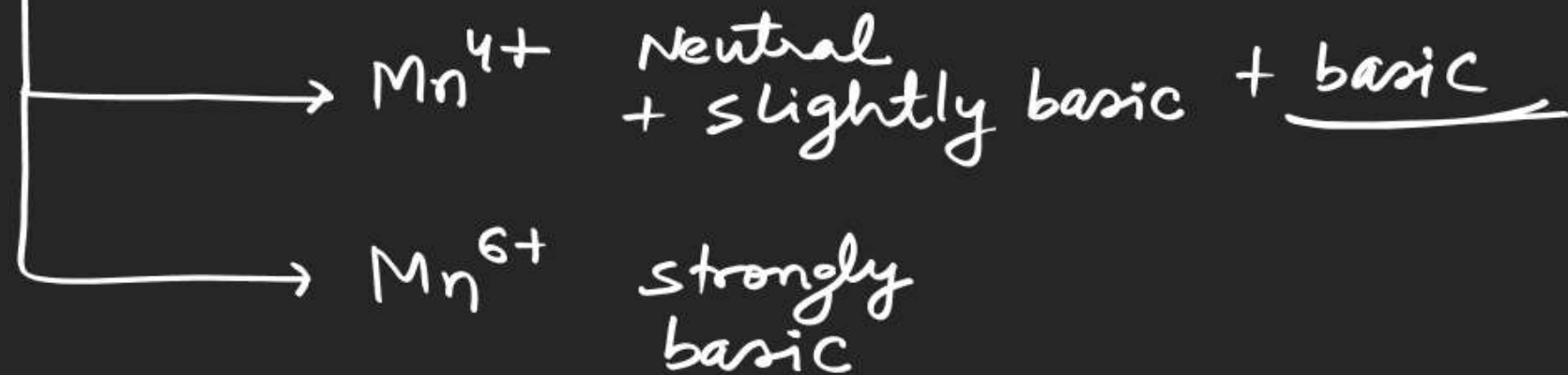
$$M = \frac{\text{no. of moles}}{\text{Vol (lit)}}$$

$$= \frac{\text{no. of moles} \times n\text{-factor}}{\text{Volume (lit)}}$$

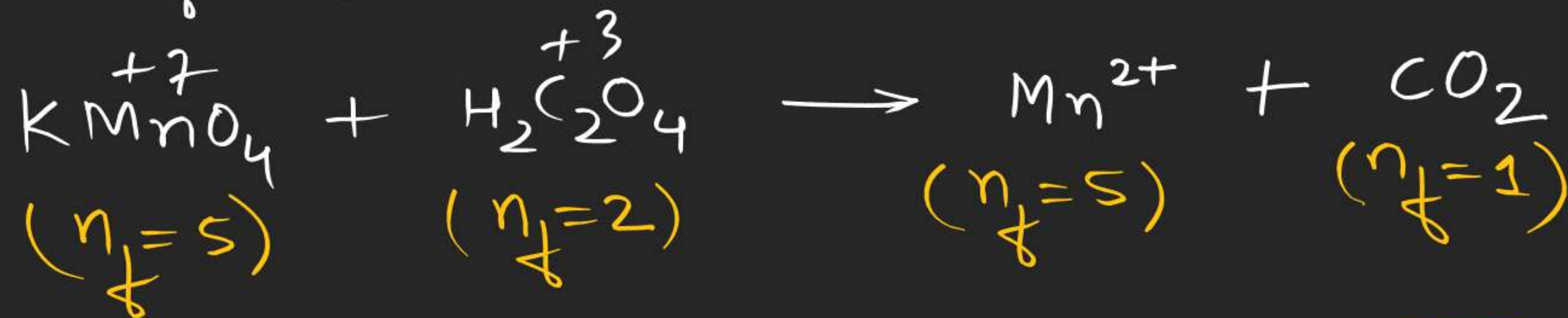
$$N = M \times n\text{-factor}$$

$$\text{no. of equivalents} = N \times V$$

$$\text{no. of moles} = M \times V$$



Q. Calculate moles of KMnO_4 required to oxidise 180 gm $\text{H}_2\text{C}_2\text{O}_4$ in acidic medium. Also calculate moles of CO_2 produced.



4eq

$$\text{eq} = 2 \times 2 = 4\text{eq}$$

4eq

4eq

$\frac{4}{5}$ mol

$\frac{4}{1}$ moles

$$n_{\text{H}_2\text{C}_2\text{O}_4} = \frac{180}{90} = 2 \text{ moles}$$

$\frac{4}{5}$ mol