REDOX + BCC.

① $NaH \longrightarrow Na + \frac{1}{2}H_2$ Not Oxl.

② $Na + \frac{1}{2}H_2 \rightarrow NaH$ not Red.

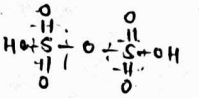
③ **Disproportionation**

- $2Cu^{+} \longrightarrow Cu + Cu^{+2}$
- $P_4 \xrightarrow{NaOH} PH_3 + NaH_2PO_2$
- $Cl_2 \xrightarrow{NaOH} NaCl + NaOCl$ sodium hypochlorite
- $Cl_2 \xrightarrow{\quad} NaCl + NaClO_3$ sodium chlorate

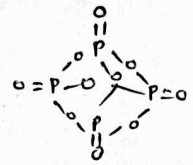
④ **O.N of O**

- −2 (generally)
- −1 (peroxide)
- −1/2 (superoxide)
- +2 (OF_2)
- +1 (O_2F_2)

⑤ **$H_2S_2O_7$** — S → +6

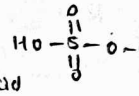


⑥ **P_4O_{10}** — P → +5



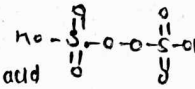
⑦ **C_3O_5** — C → +6

⑧ * **$H_2S_2O_5$** — S → +6



Peroxy sulphuric acid
OR
Caros acid

⑨ **$H_2S_2O_8$** — S → +6



Peroxy disulphuric acid
OR
Marshall's acid

⑩ **C_3O_2** — 4/3

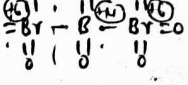
⑪ **Fe_3O_4** — $FeO + Fe_2O_3$ (+2, +3)

Ferroso ferric oxide

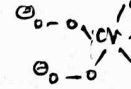
⑫ **$CaOCl_2$** — Ca^{+2} $O^{(-1)}Cl^{-1}$

Bleaching powder → 'O'

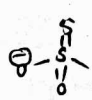
⑬ **Br_3O_8** (Wurtz acid)

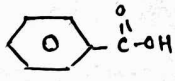


⑭ **K_3CrO_8** — Cr → +5



⑮ **$Na_2S_2O_3$**



⑯  / $C_7H_6O_2$

$7x + 6 - 2 = 0$ $\quad x = -\frac{2}{7} \times 7 = -2$

⑰ **Balancing Redox**

- Find oxidising & reducing species.
- Balance total Fes & Fes in O.N
- Multiply with No. used to balance O.N (↑/↓)
- Balance O.

⑱ $Cu + 4HNO_3 \rightarrow Cu(NO_3)_2 + 2NO_2$

⑲ $4P_4 + 12NaOH + 8H_2O \rightarrow 4PH_3 + NaH_2PO_2$

⑳ $3Cl_2 + 6NaOH \longrightarrow 5NaCl + NaClO_3$

㉑ **N-Factor**

No. of moles of $e^{\ominus}$ lost or gained by 1 mole of given R.A or O.A is klg as its n-factor

㉒ $KMnO_4 \xrightarrow{H^+} Mn^{+2}$ (nF = 5)

㉓ $K_2Cr_2O_7 \xrightarrow{H^+} Cr^{+3}$ (nF = 6)

㉔ $Ba(MnO_4)_2 \xrightarrow{H^+} Mn^{+2}$ (nF = 10)

㉕ $I_2 \longrightarrow I^{\ominus}$ nF = 2

㉖ $I_2 \longrightarrow IO_3^{\ominus}$ nF = 10

㉗ $I^{\ominus} \longrightarrow IO_3^{\ominus}$ nF = 6

㉘ $2Cu^{+} \longrightarrow Cu + Cu^{+2}$

2 mole of $Cu^{+} \longrightarrow$ 1 mole $e^{\ominus}$

1 mole of $Cu^{+} \longrightarrow \frac{1}{2}$ mole $e^{\ominus}$

(n.F = 1/2)

㉙ **n-Factor (disproportionation) = $\frac{nF_1 \times nF_2}{nF_1 + nF_2}$**

㉚ **law of equivalence**

$A + B \longrightarrow C + D$

$Eq_A = Eq_B = Eq_C = Eq_D$

㉛ **Equivalent of Hydroxide**

$H^+ + OH^- \rightarrow H_2O$

1 eq 1 eq

1 g 17 g.

㉜ **Equivalent**

Mass of anything which combines with/displace 1g H, 8g O, 35.5 Cl.

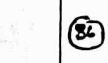
㉝ $H_2SO_4 \rightarrow 2H^+ + SO_4^{2-}$ / $H_2SO_4 + NaOH \rightarrow NaHSO_4 + H_2O$

E = 49gm E = 98gm

㉞ **E = Atomic Mass / valency**

㉟ **Acid = Molecular Mass / Basicity**

㊱ **Basicity** → No. of Moles of NaOH neutralised by 1 mole of given acid.

㊲ **H_3BO_3** →  Monobasic but APROTIC

$B(OH)_3 \xrightarrow{H_2O} [B(OH)_4]^{+} + H^{+}$ B = 1

㊳ **E = M / Acidity**

㊴ **Salt:-** **E = Formula wt. / total +ve charge on catn / total -ve charge on Anion**

㊵ **Oxidising Agent/Oxidant:-**

- Get reduced
- Help in oxidation
- Atoms in Lest O.S.

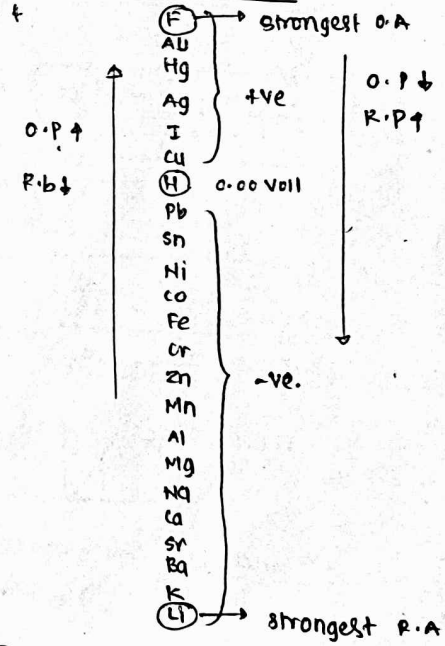
㊶ **Reducing Agent / Reductant:-**

- get oxidise
- Help in reduction

㊷ **O.S or reducing agent both (disproportionation ले सकते है।)**

- O ← H_2O_2 → −2
- −2 ← $S^{+4}O_2$ → +6
- −2 ← $S^{+4}O_3$ → +6
- −1 ← HOBr → +7

㊸ **Electrochemical series**



㊹ **Oxidising Power ∝ SRP**

㊺

Substance	Absorbs
Alkaline Pyragallol	O_2
Heat Cu	O_2
Turpentine oil	O_3
KOH Pellet	CO_2
Heated Hg	N_2
Heated Al	N_2
Anhyd. $CaCl_2$	H_2O (Vapour)