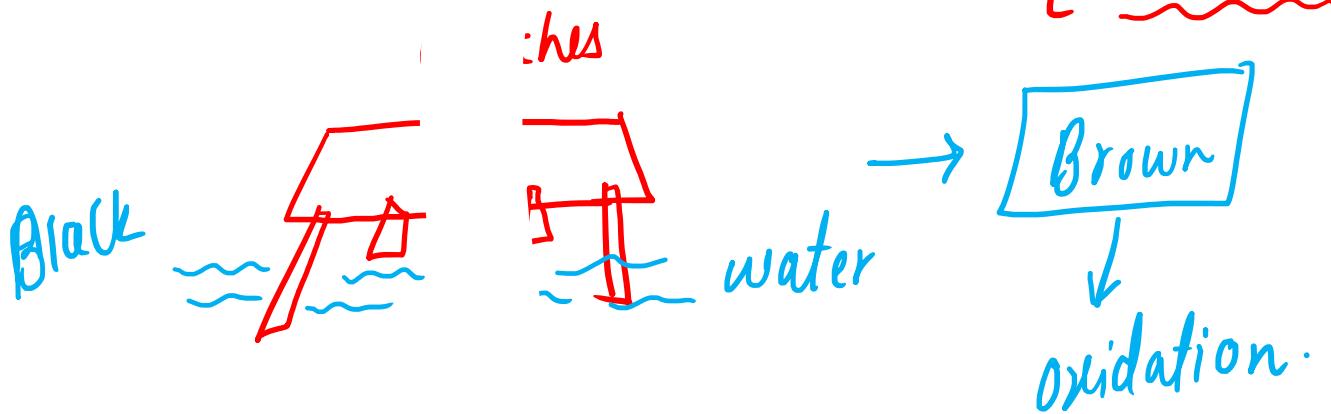
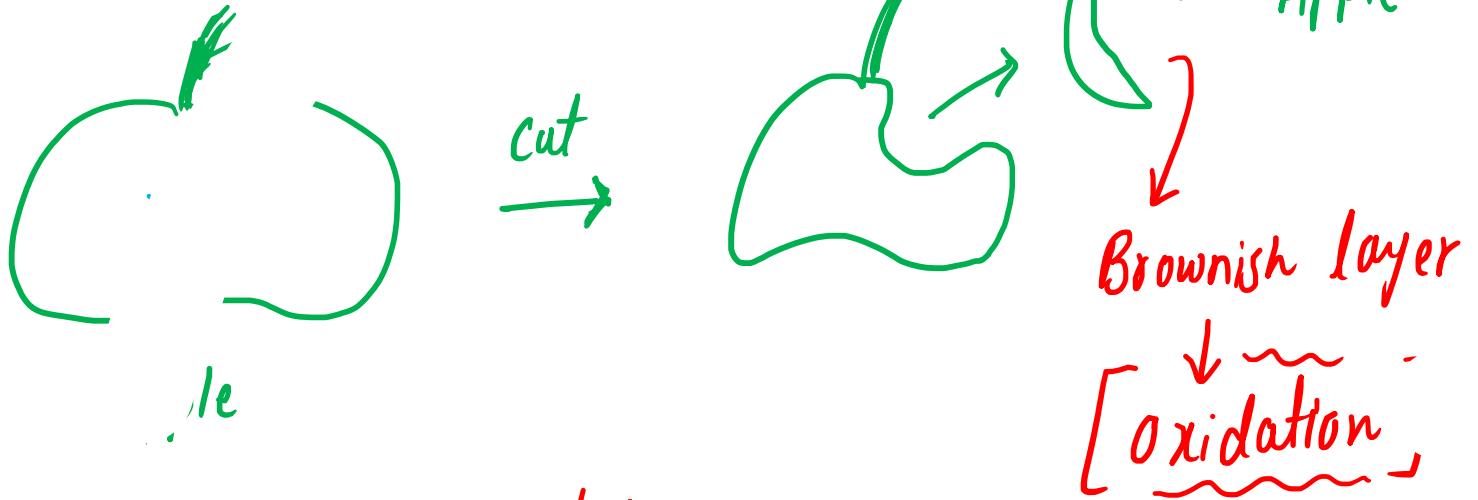


Ch. 6 → Redox Reaction !!

Introduction :-

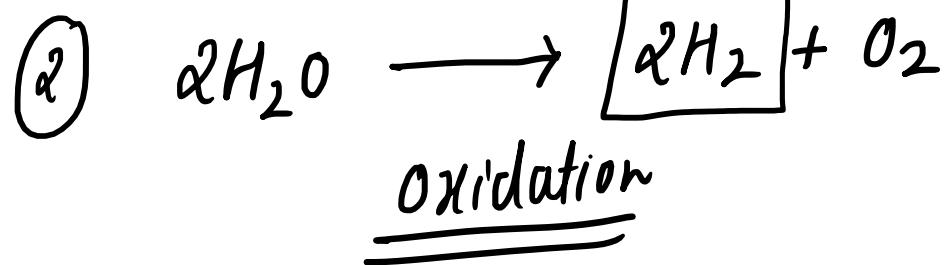
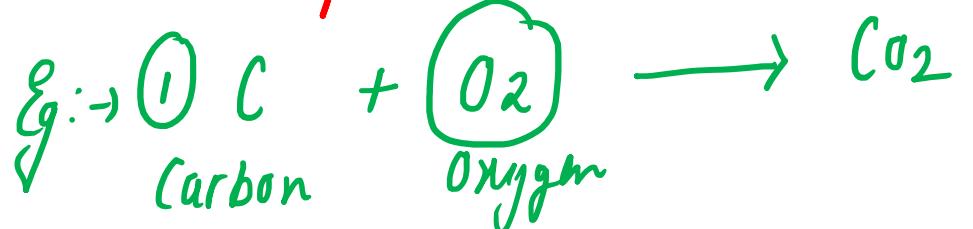
Oxidation → Metals loses its original property !!
cut wala Apple



150 likes!!

Oxidation!! Reaction

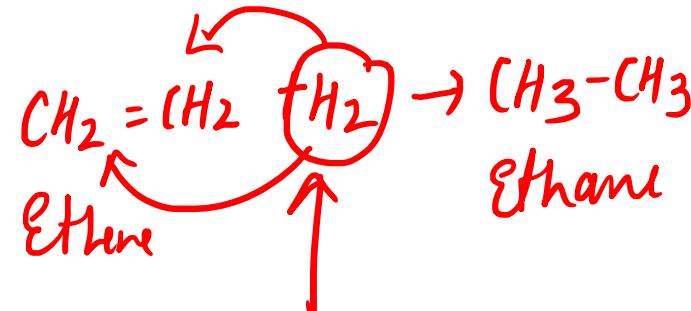
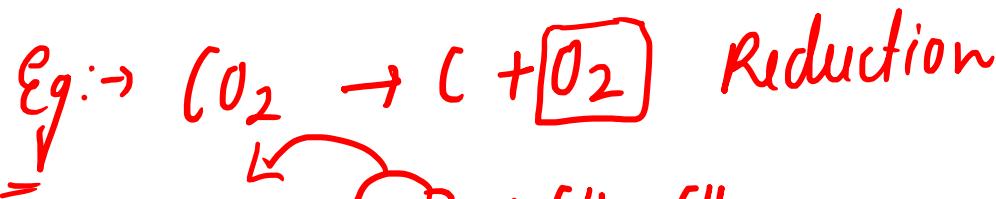
" A process in which
oxygen is **Gain** → Reactant
hydrogen is **released** → Product



Till
10th

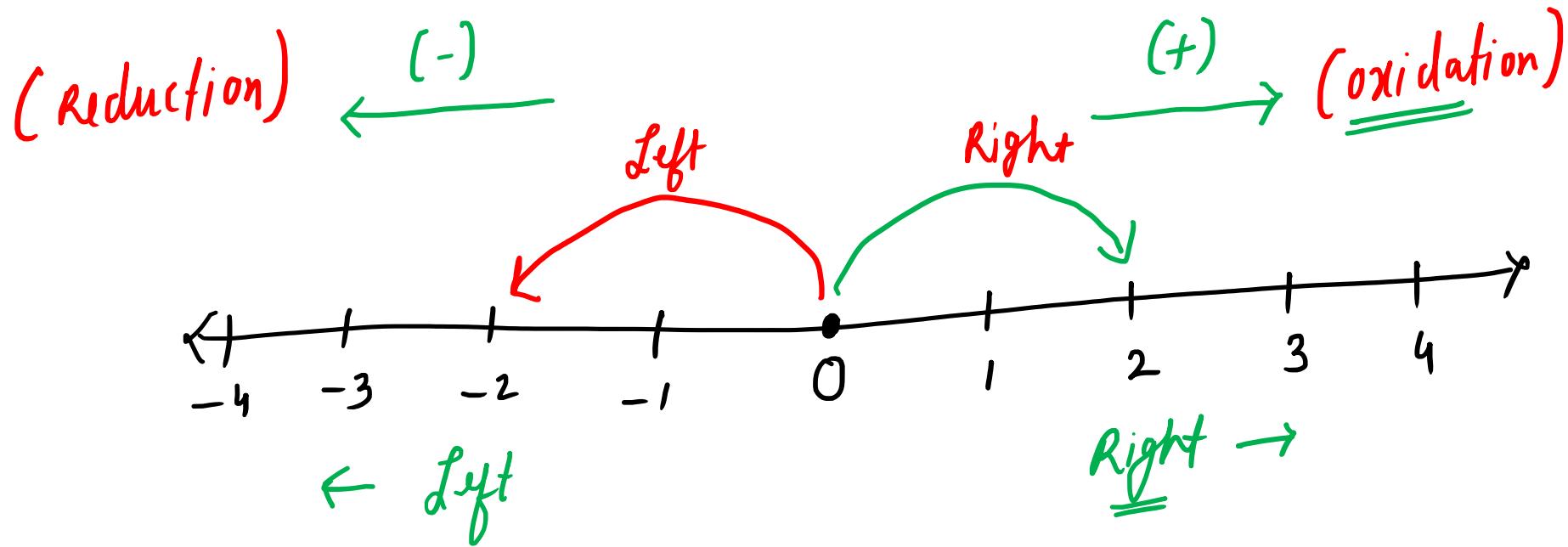
Reduction !! Reaction

6 A process in which
Hydrogen is Gain ← Reactant
Or Oxygen is Released → Product.



Grain
↓
Reactant

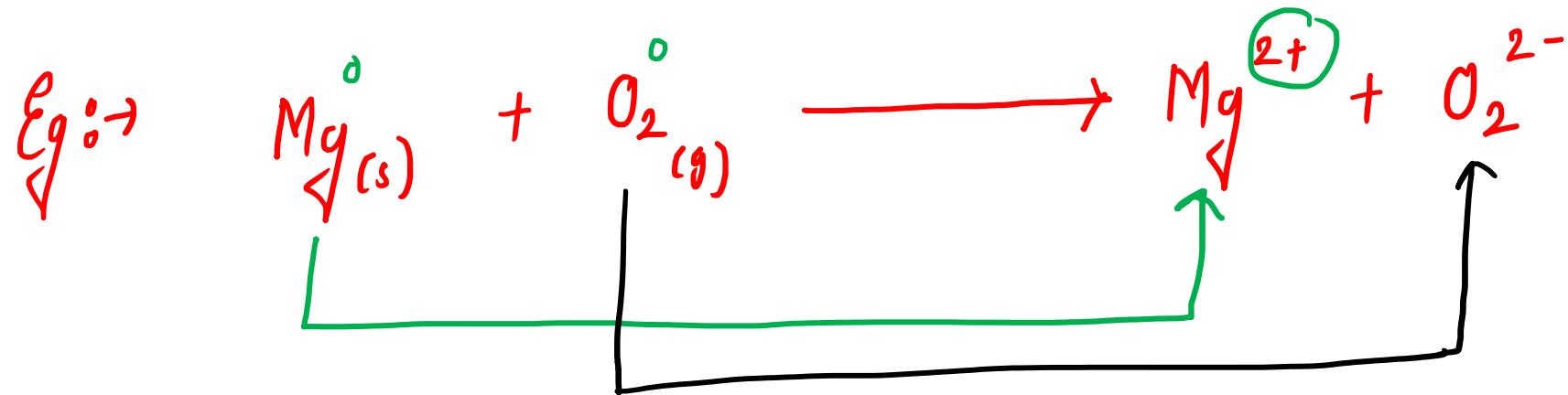
Oxidation & Reduction \rightarrow 11th & 12th



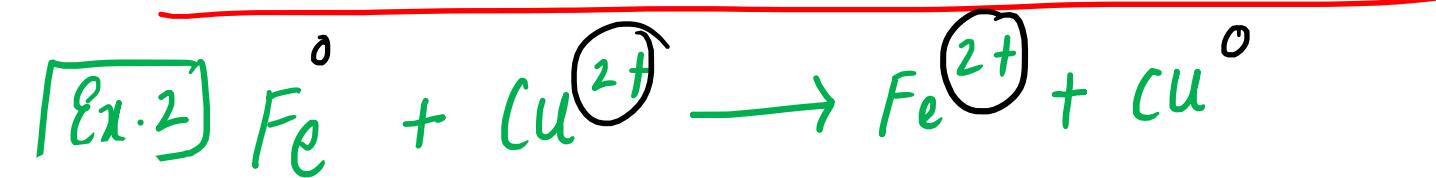
✓ Right \rightarrow Oxidation

✓ Left \rightarrow Reduction

"CONCEPT"



" Redox Reaction "



oxidation = ? (Fe) reduction = ? Cu.

OXIDATION !!

- ① oxygen is added [reactant]
- ② Removal of hydrogen [product]
- ③ Removal of Electron [lose]

OXIDANT [oxidising Agent]

"Gain" of Electron ^{jj}

REDUCTION !!

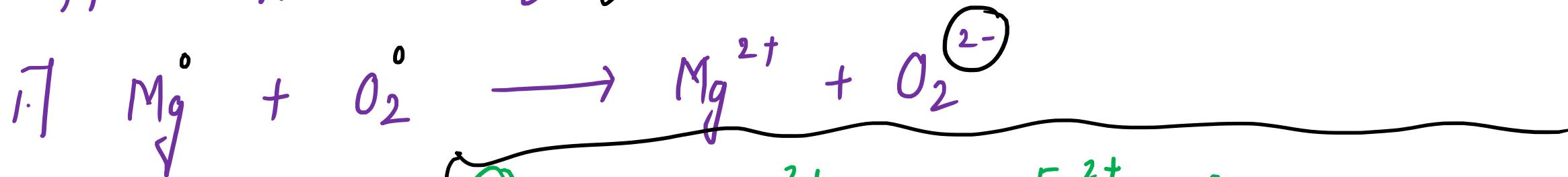
- ① Hydrogen is added [reactant]
- ② Removal of oxygen [product]
- ③ Gain of Electron

REDUCTANT [Reducing Agent] \downarrow

"Lose" of Electron ^{jj}

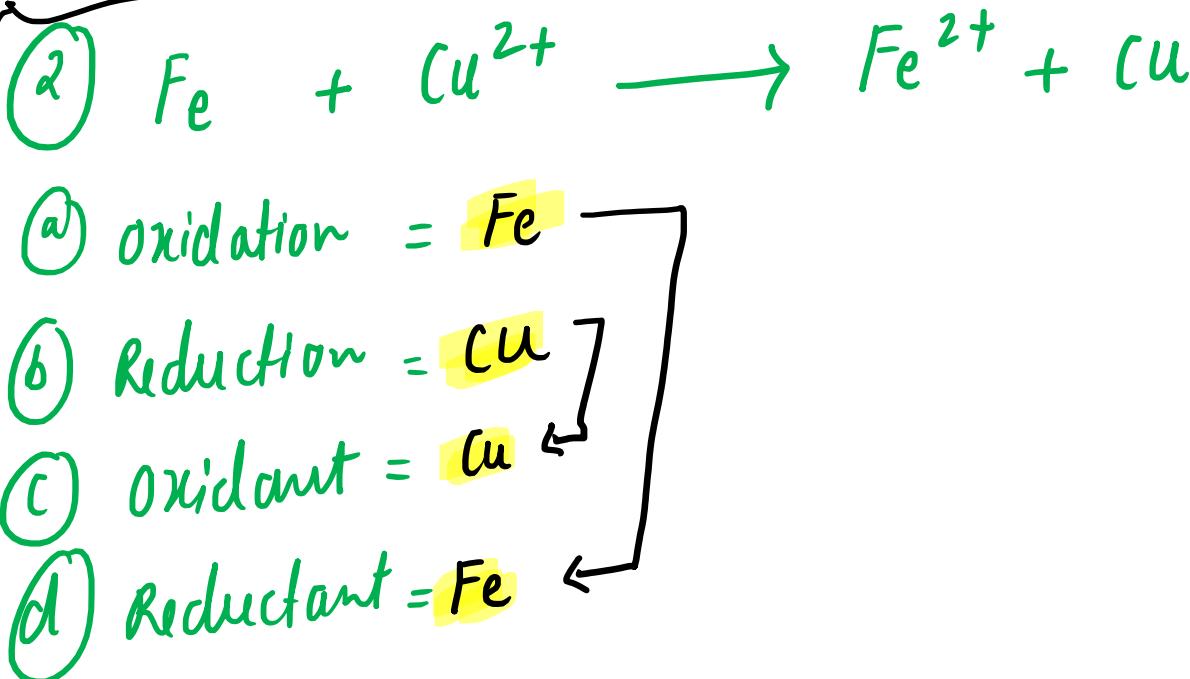
#clear!

Q.7 identify which is [oxidation, Reduction, oxidant, Reductant]



Ans ↴

Oxidation = Mg
Reduction = O_2
→ Oxidant = O_2
→ Reductant = Mg



#200-likes !!

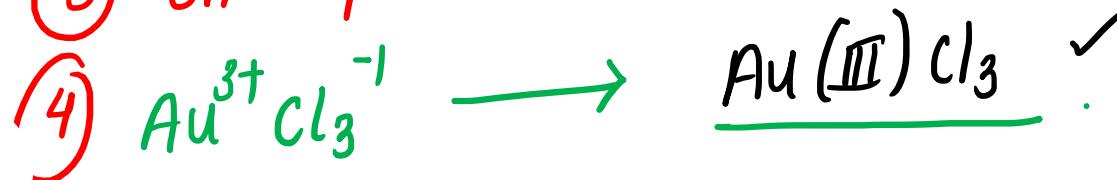
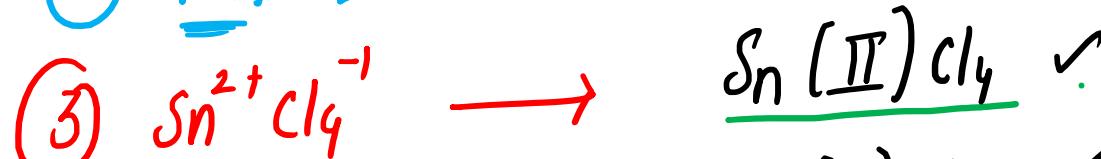
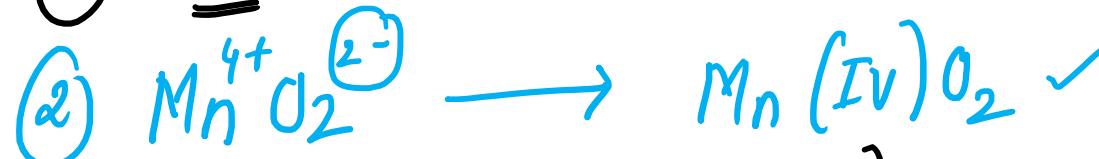
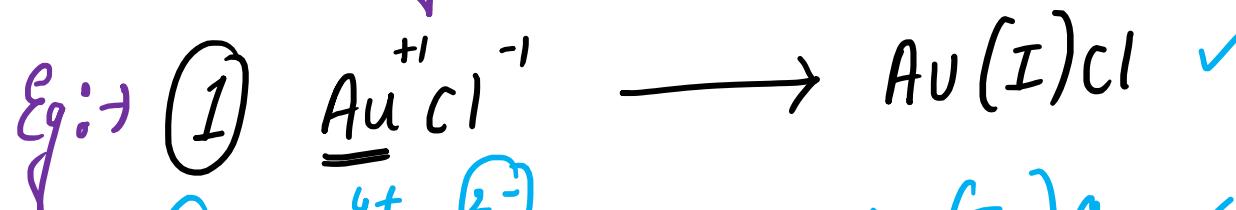
Clear

STOCK NOTATION!!

→ I, II, III, IV, V, etc

- Stock notation is denoted by [ROMAN NUMERAL]
- This was given by German Scientist
“Alfred Stock”
- It is given to specify the oxidation no. of Metal

[(+) → metal
(-) → nonmetal]



DPP_DAY_1

- Q.7 Learn define :- (a) oxidation (b) Reduction (c) Redox Reaction
(d) oxidant (e) Reductant

Q.7 Stock Notation ✅

✓

"Elements → Groups!!

Li → G₁

Na → G₁₁

K → G₁

Completed?

} P_o this

(O.S) → Oxidation STATE / Oxidation no.
[JEE / NEET / CET] → 1-2 questions } sureshot
→ 1M / 2M }

- # Rules !!
- ① Each Group I Elements → +1
 - ② Each Group II Elements → +2
 - ③ Each Group 17 [Halogrn] → -1
 - ④ O [single oxygen] → -2
- oxidation states
- 12th
learn & Remember

Compound $[E_1 + E_2]$ → O (Zero)

$$\begin{array}{l} 0 = -2 \\ \underline{O_2} = \underline{-2 \times 2} \end{array}$$

Find Oxidation States ↓

(1)



$$x + (-2 \times 2) = 0$$

$$x - 4 = 0$$

$$\boxed{x = 4}$$

Sulphur (o.s.) = +4

(2) $\underline{KMnO_4}$

$$1 + (x) + (-2 \times 4) = 0$$

$$1 + x - 8 = 0$$

$$-7 + x = 0$$

$$\boxed{x = +7}$$

$\therefore Mn = (o.s.) = +7$

(3) $\underline{SO_3}$

$$x + (-2 \times 3) = 0$$

$$x - 6 = 0$$

$$\boxed{x = 6}$$

$\therefore S = (o.s.) = +6$

(4)



$$2x + (-2 \times 5) = 0$$

$$2x - 10 = 0$$

$$2x = 10$$

$$x = \frac{10}{2} \boxed{5}$$

$$\boxed{N = +5}$$

$$\boxed{N_2 = 10}$$

$$\boxed{x = 5}$$

(5) $K_2 \underline{Cr_2O_7}$ Cr = ?

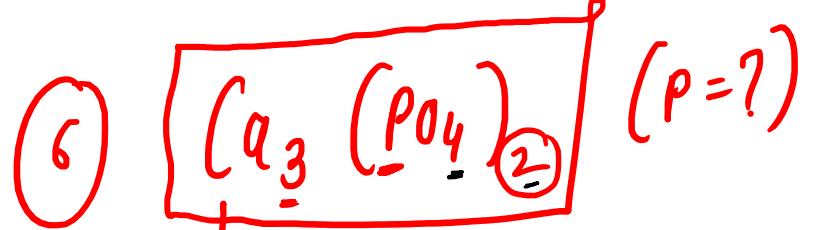
$$(1 \times 2) + 2x + (-2 \times 7) = 0$$

$$2 + 2x - 14 = 0$$

$$2x - 12 = 0$$

$$x = 12/x^6$$

$$\boxed{x = Cr = 6}$$



$\xrightarrow{\text{Ans}}$

$$(+\underline{2 \times 3}) + 2x + (-2 \times 8) = 0$$

$$\underline{6} + 2x - \underline{16} = 0$$

$$2x - 10 = 0$$

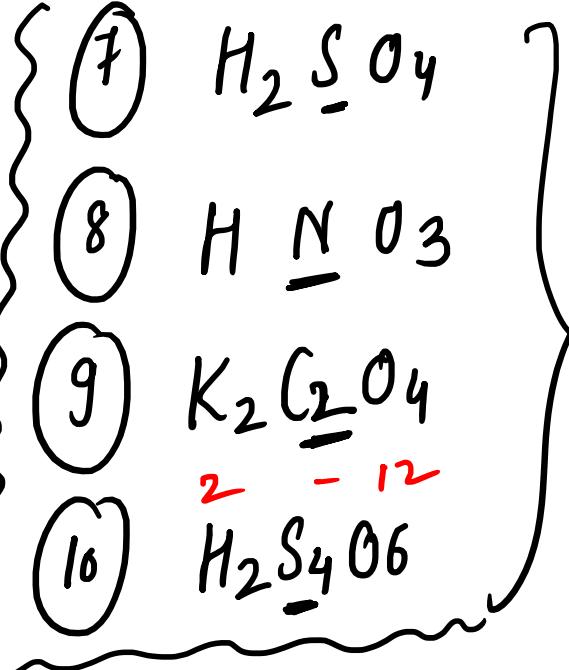
$$2x = 10$$

$$x = \frac{10}{2} = 5$$

("Chemistry")

$$\boxed{4x = 10}$$

$$x = \frac{10}{4} = \frac{5}{2}$$



$2C = +5$ \checkmark
 $2x = 10$ $x = \frac{10}{2} = 5$

Go it Now!!

Khatam!!

- { 7 $\rightarrow +6$
 8 $\rightarrow +5 \checkmark$
 9 $\rightarrow \cancel{+4} +3$
 10

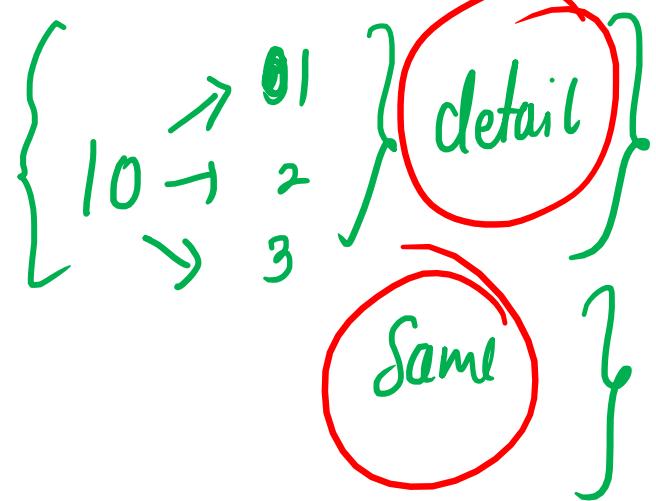
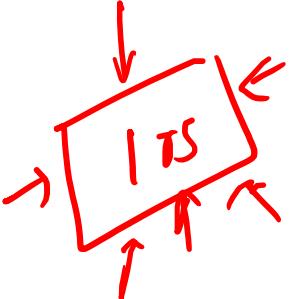
$H_2 S_4 O_6$

$$2 + 4x - 12 = 0$$

$$4x - 10 = 0$$

$$4x = 10$$

$$x = \frac{10}{4} = \frac{5}{2} = 2.5$$



Chemistry
↓
30 } 1 Month

Physics
↓
30 } 1 Month

I watching!!
£100

11th

- CHEMISTRY → 10 ch
- Physics → 10 ch.

} 2.5

2.5 Month



$$\rightarrow \chi + (-2 \times 4) = -1$$

$$\rightarrow \chi - 8 = -1$$

$$\chi = -1 + 8$$

$$\boxed{\chi = +7}$$

②



$$\chi + (-2 \times 4) = -1$$

$$\chi \boxed{-8} = -1$$

$$\chi = -1 + 8$$

$$\boxed{\chi = 7}$$

+1x2

③



\rightarrow

$$\chi + (1 \times 4) = +1$$

$\frac{-1}{-4}$

-3

$$\chi \boxed{+4} = 1$$

$$\chi = 1 - 4$$

$$\boxed{\chi = -3}$$

$N = -3$



$$(+2) + 2x + (-4 \times 2) = 0$$

$$\boxed{2} + 2x - 8 = 0$$

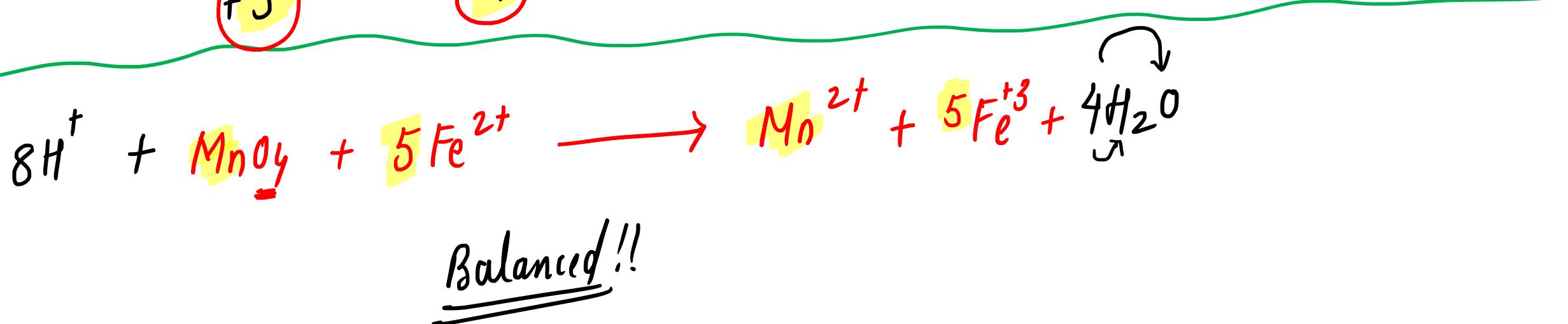
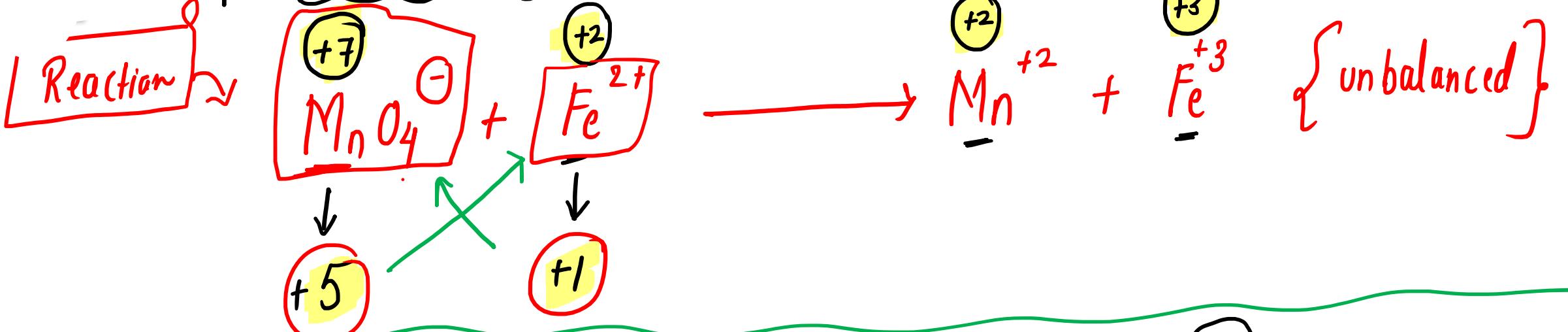
$$6 + 2x = 0$$

$$2x = 6$$

$$\boxed{\chi = 3}$$

1	SO_3^{2-}
2	BrO_3^-
3	NO_3^-
4	NO_2^-
5	SO_4^{2-}

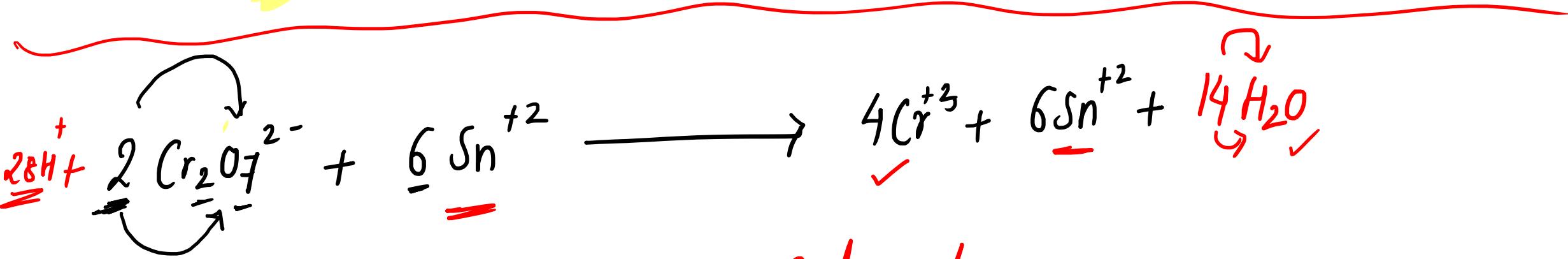
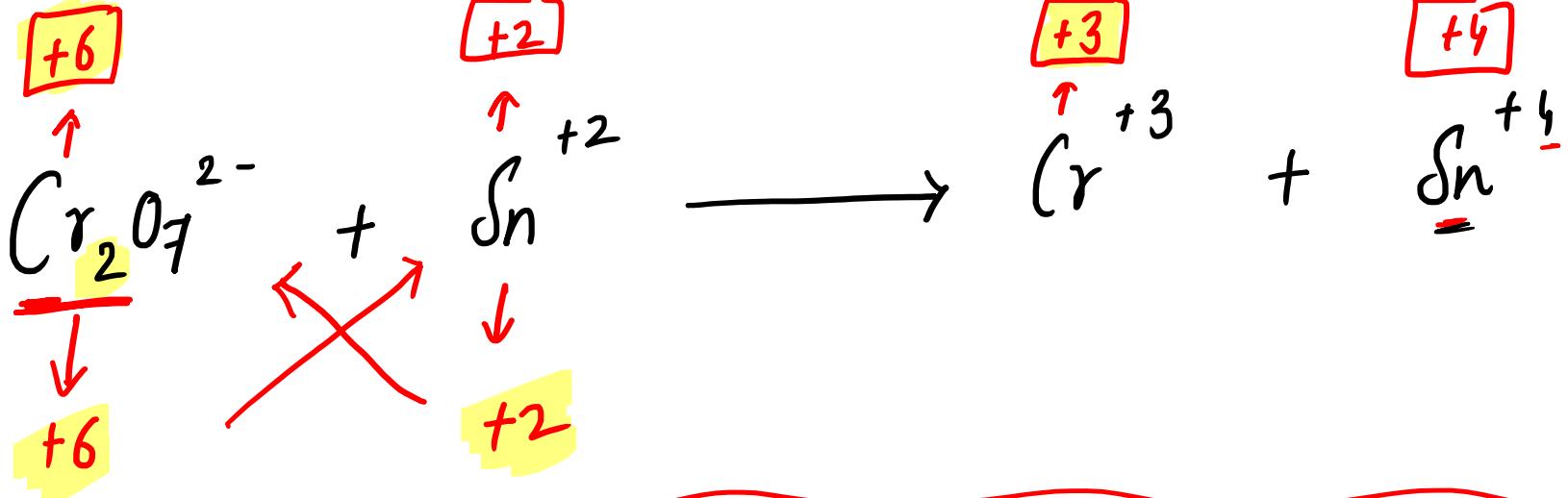
BALANCING REDOX REACTION



$$7 - 2 = 5$$

$$3 - 2 = 1$$

$$\begin{aligned} & \xrightarrow{\text{MnO}_4^-} \\ & x + (-2x_4) = -1 \\ & x - 8 = -1 \\ & x = -1 + 8 \\ & x = 7 \end{aligned}$$



Balanced.

$$\text{Cr} = 6 - 3 = 3 \times 2 = 6$$

$$\text{Sn} = 4 - 2 = 2$$

$$(r_2 \text{ or })^{2-}$$



$$2x + (-2 \times 7) = -2$$

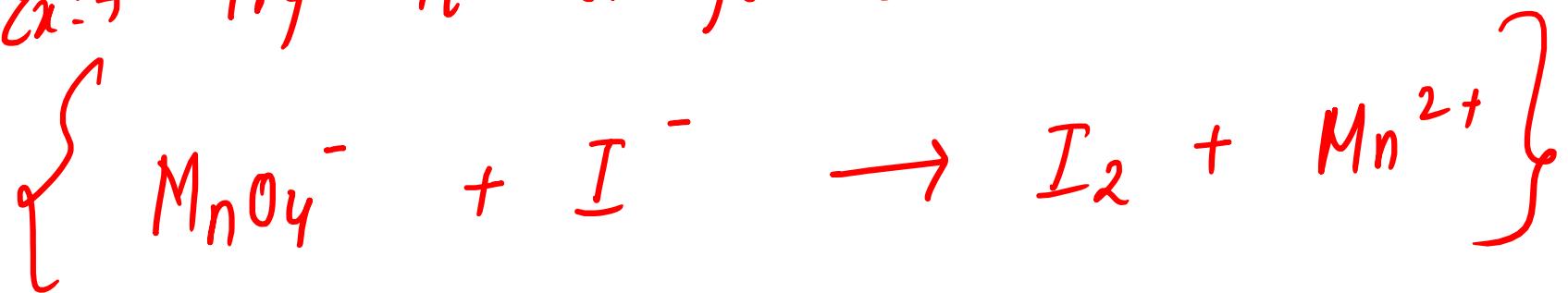
$$2x - 14 = -2$$

$$2x = -2 + 14$$

$$2x = 12$$

$$\boxed{x = 6}$$

Ex: Try it on your own!!



BASIC

✓ ELECTRODES ✓

Anode

(+)

Cathode

(-)

✓ IONS ✓

Anion

(-)

Cation

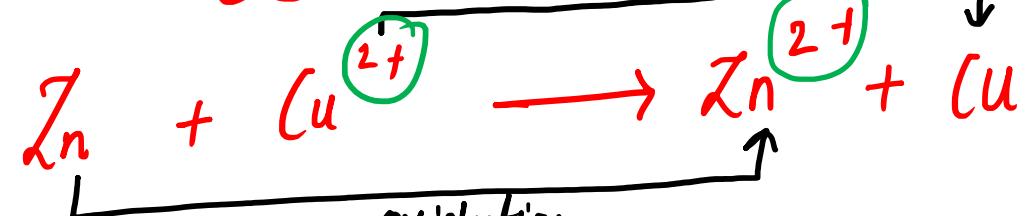
(+)

✓ POTENTIAL : \rightarrow Electrode Potential

Difference between two
Electrodes

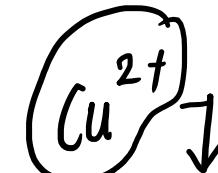
Anode \longleftrightarrow Cathode

Consider Reaction !!



Oxidation: \rightarrow Zn

Reduction: \rightarrow Cu



Cupric
ions

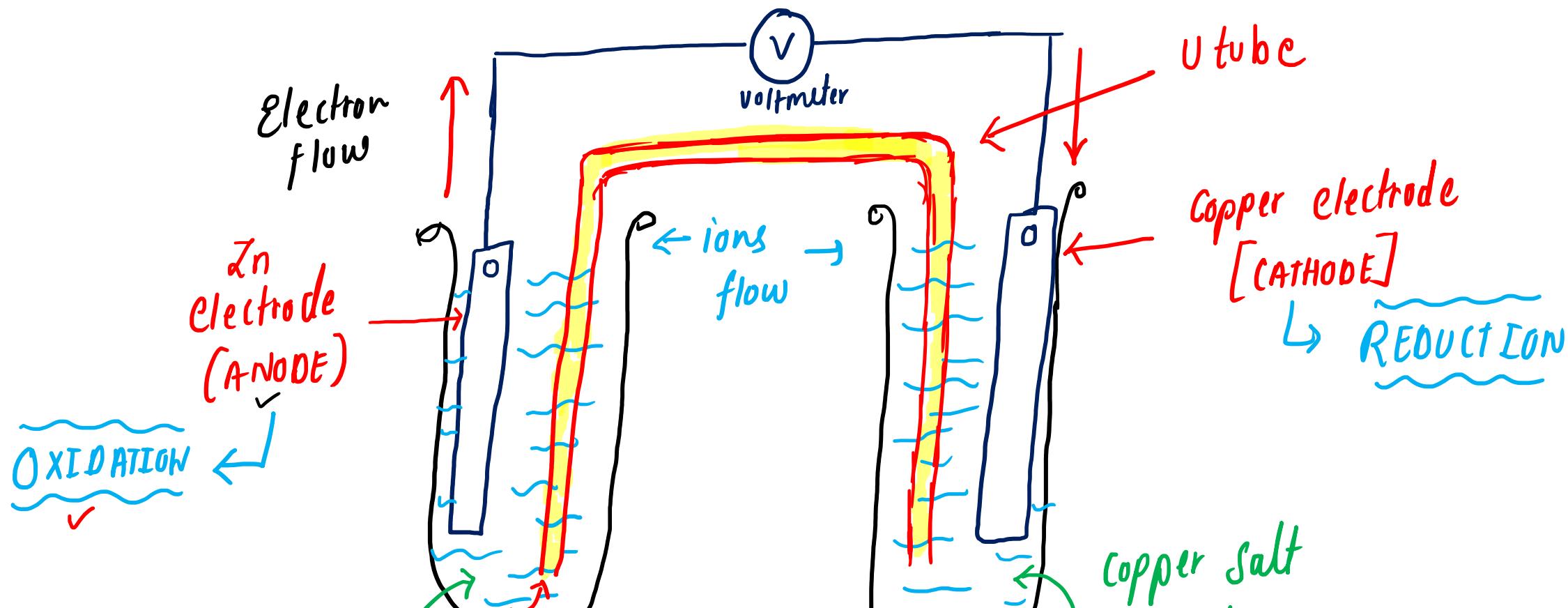


fig. DANIEL CELL } Redox Reaction

" How the ions can be transferred from
ANODE → CATHODE "

BRIEF Discussion about DANIEL CELL !!

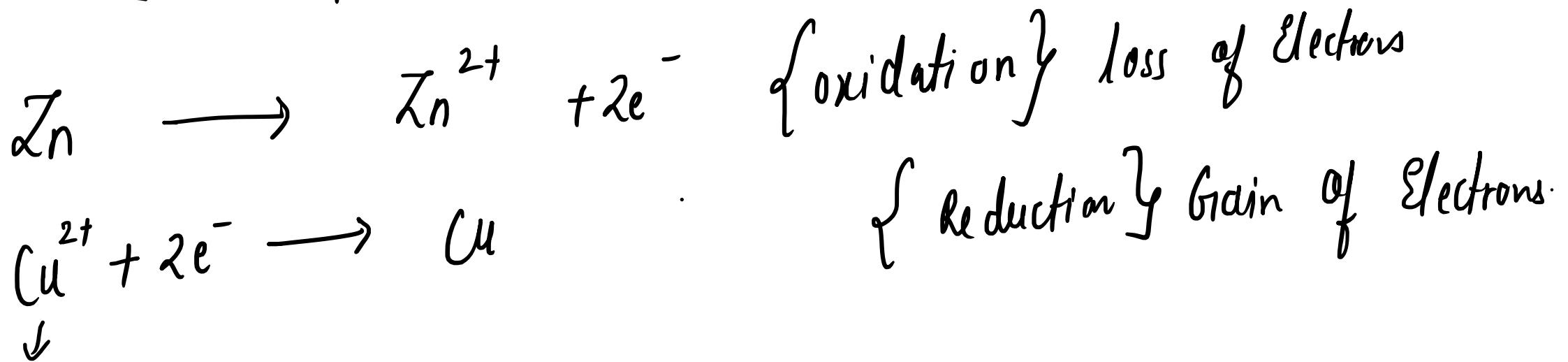
- (1) The two beakers are connected by salt bridge [v-tube].
- (2) Salt bridge contains gels.
KCl, NH₃NO₃ [agar-agar gel]
- (3) Zn side [Zn electrode] loses Electron.
- (4) Cu side [Cu electrode] gains Electron.
- (5) ∵ Zn acts as a Negative terminal
- (6) ∵ Cu acts as a Positive terminal.

⑥ As a result, ions will transfer from one container to another & its shown in voltmeter [deflection] used to measure P.D

⑥ This is nothing but "DANIEL CELL"

REDOX COUPLE
Electrode Potention + Electrode Reaction

Reaction



↓
cupric
ions.

#OPP_3

Q.7 DANIEL CELL } construction + Theory.

Q.7 Pg. no. 90 \rightarrow { 6.1 chart }

\downarrow
Standard electrode potentials
of some redox
couples.



* CHAPTER - COMPLETED !!