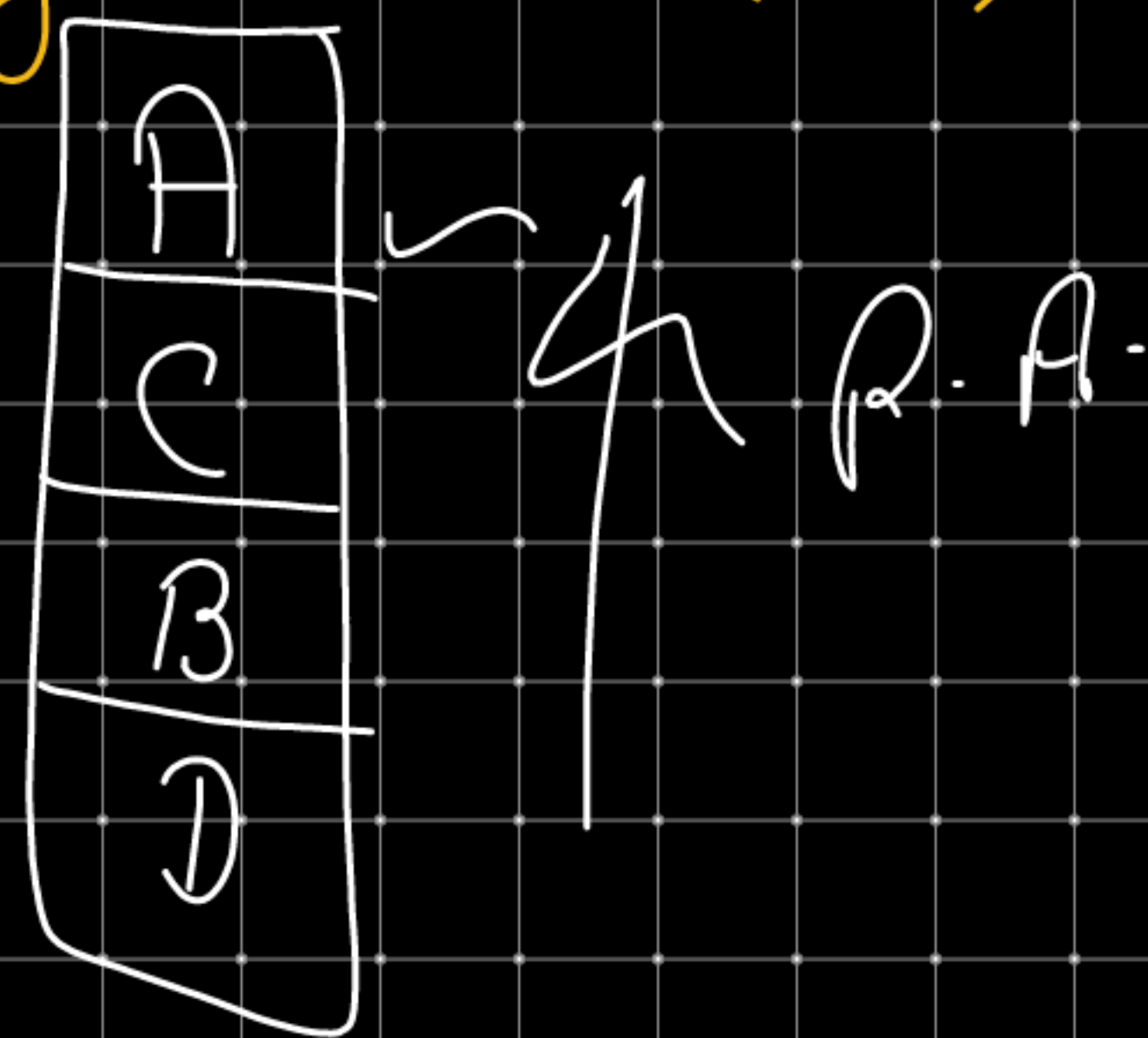
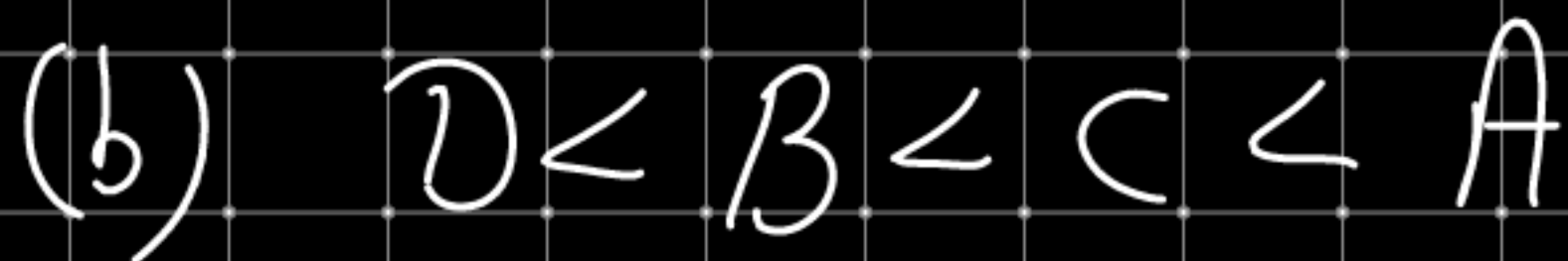


Q.3 S.R.P. of four elements A, B, C & D are -2.5V, 0.7V, -0.25V and +1.5V respectively. Arrange A, B, C and D in increasing order of

(a) Reactivity

(b) Reducing nature. (P.A.)

Sol. (a) Reactivity of metals.



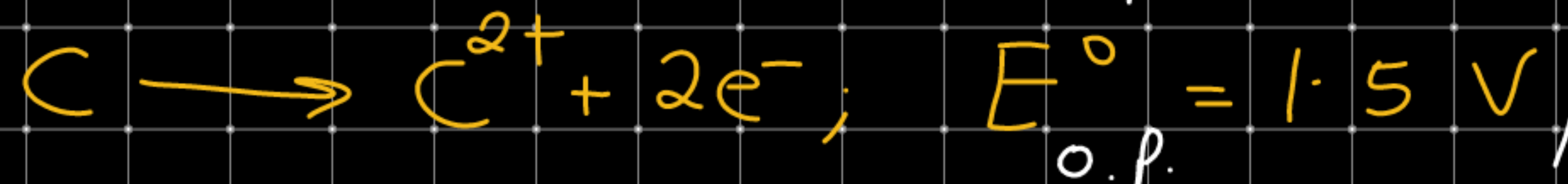
Q.4. Given



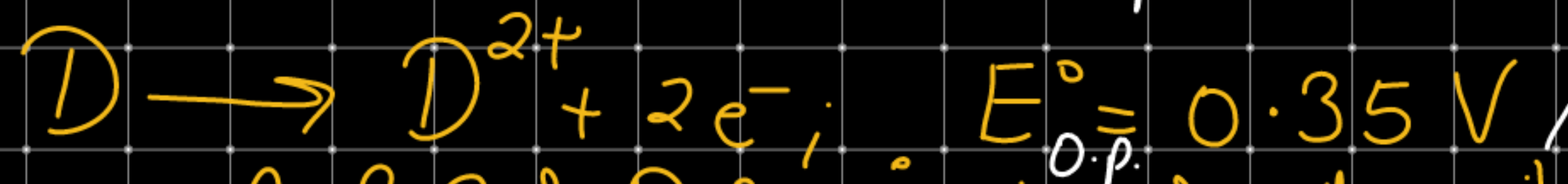
$E_{R.P.}^{\circ} = -0.15 V$



$E^{\circ} = +0.75 V$



$E^{\circ} = -1.5 V$



$E^{\circ} = -0.35 V$



Arrange A, B, C & D in increasing order

(1) Reactivity

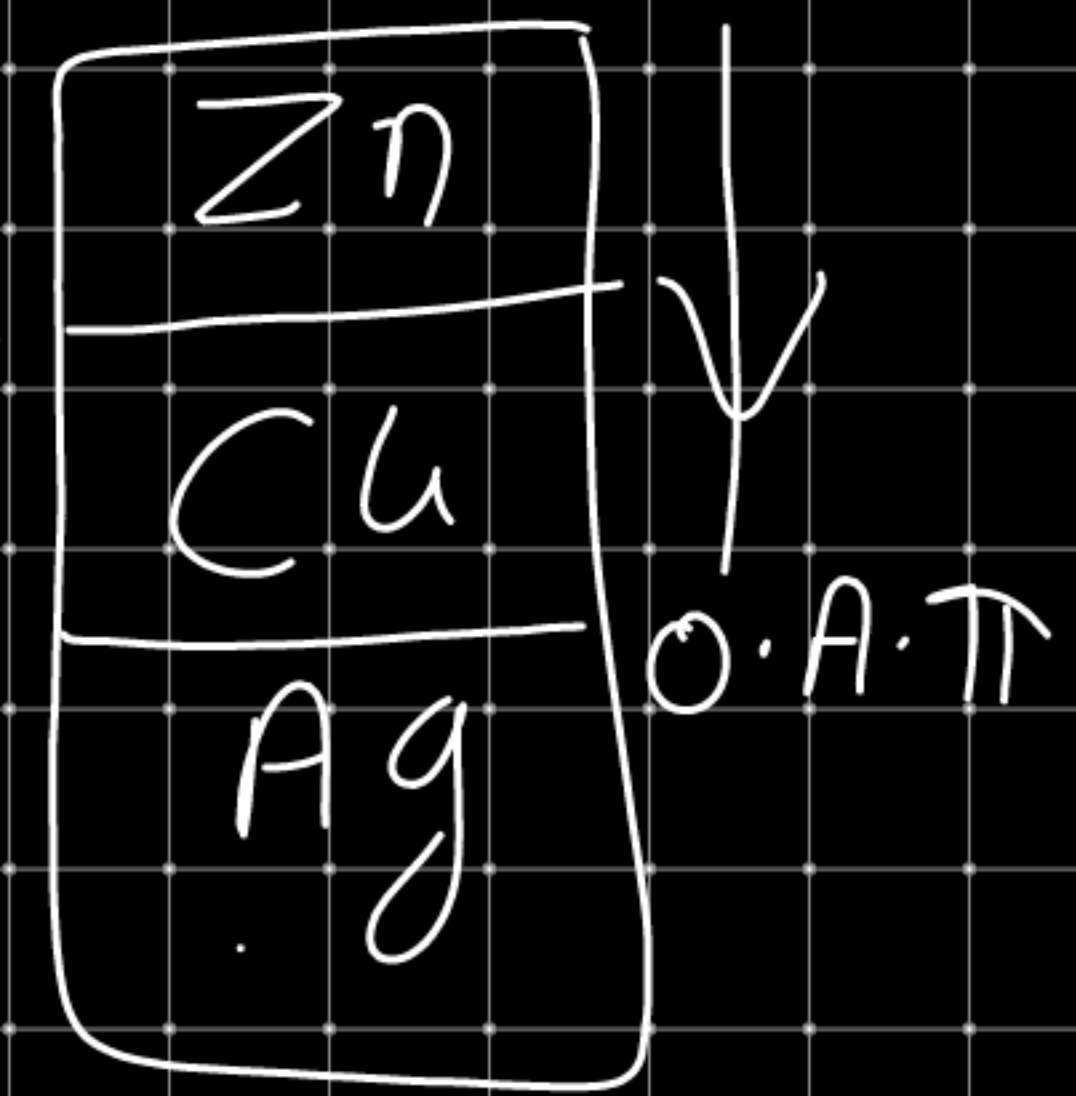
$B < A < D < C$

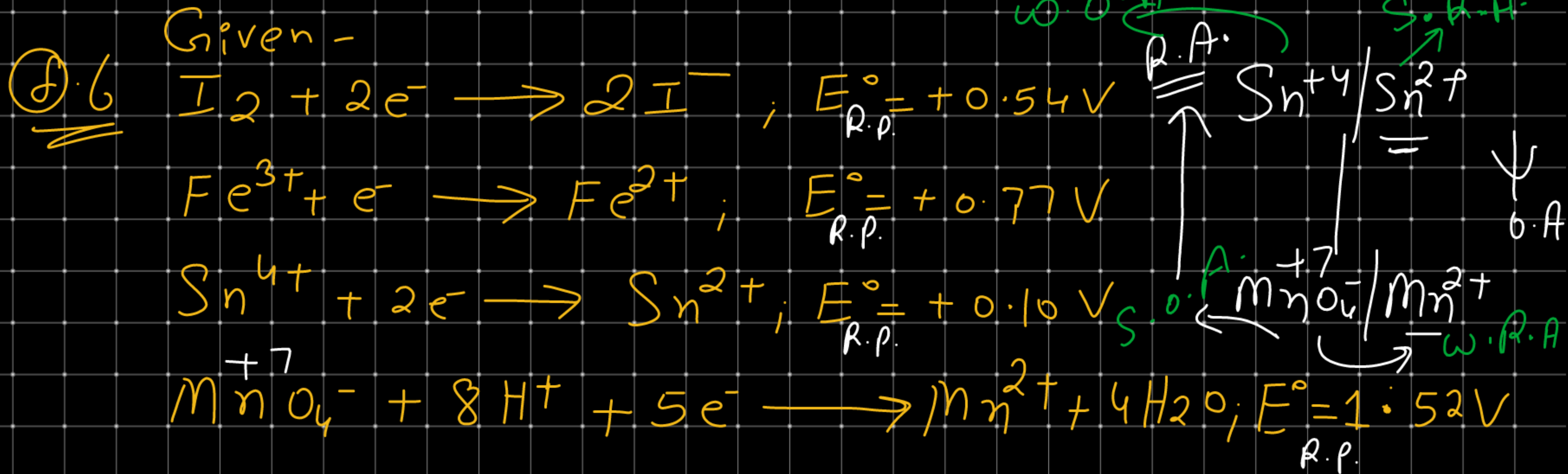
(2) Reducing Nature.

$B < A < D < C$

⑤ 5. S.R.P. of Zn, Cu & Ag are $-0.76V$, $+0.34V$ and $+0.80V$ respectively which one is correct.

- ~~(a)~~ Ag can oxidise Zn & Cu
 $Ag \rightarrow Ag^-$
 $Zn \rightarrow Zn^{2+}$
 $Cu \rightarrow Cu^{2+}$
- (b) Zn can reduce Cu^{2+} & Ag^+
 $Zn \rightarrow Zn^{2+}$
 $Cu^{2+} \rightarrow Cu$
 $Ag^+ \rightarrow Ag$
- ~~(c)~~ Cu can oxidise Zn
 $Cu \rightarrow Cu^{2+}$
 $Zn \rightarrow Zn^{2+}$
- (d) Cu can reduce Ag
 $Cu \rightarrow Cu^{2+}$
 $Ag \rightarrow Ag^-$





(a) Strongest oxidant $\Rightarrow MnO_4^-$

(b) Strongest reductant $\Rightarrow Sn^{2+}$

(c) Weakest oxidant $\Rightarrow Sn^{4+}$

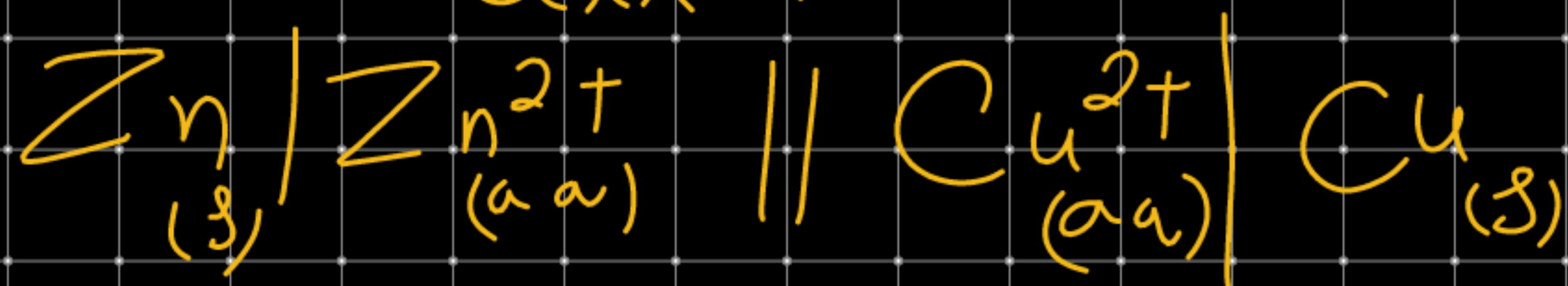
(d) Weakest reductant $\Rightarrow Mn^{2+}$

To determine Standard cell potential
/ Standard E.M.F. of Cell

$$E_{\text{cell}}^{\circ} = \text{S.R.P. of Cathode} - \text{S.R.P. of Anode}$$
$$= \text{S.R.P. of Cathode} - (-\text{S.O.P. of Anode})$$

$$E_{\text{cell}}^{\circ} = \text{S.O.P. of Anode} + \text{S.R.P. of Cathode}$$

② Cal. E_{cell}° for



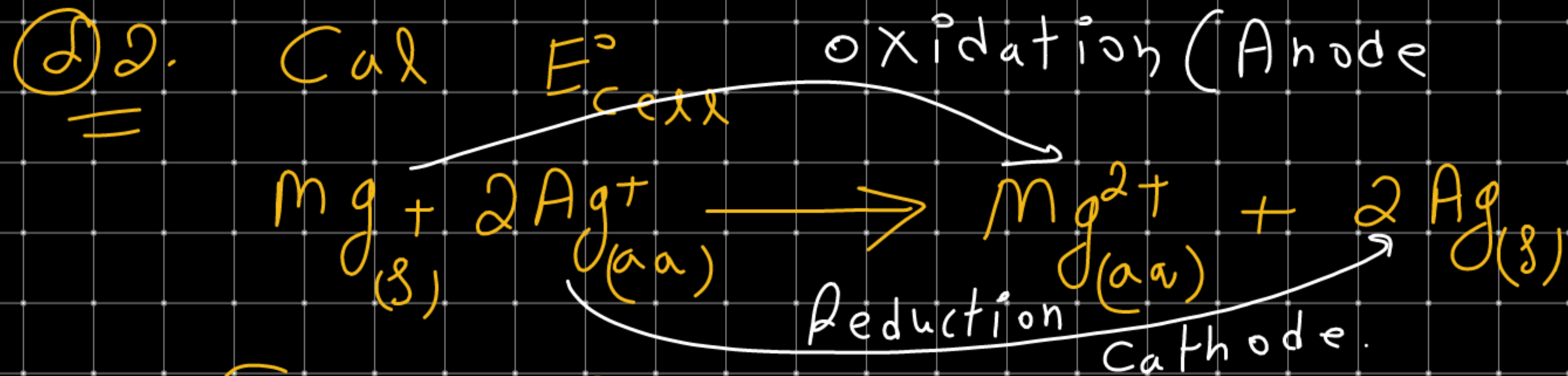
Given: $E_{\text{Zn}/\text{Zn}^{2+}}^{\circ} = 0.76 \text{ V}$; $E_{\text{Cu}^{2+}/\text{Cu}}^{\circ} = +0.34 \text{ V}$

Sol.

$$E_{\text{cell}}^{\circ} = E_{\text{Zn}/\text{Zn}^{2+}}^{\circ} + E_{\text{Cu}^{2+}/\text{Cu}}^{\circ}$$

$$= 0.76 + 0.34 \text{ V}$$

$$\boxed{E_{\text{cell}}^{\circ} = 1.10 \text{ V}}$$



Given $E^{\circ}_{\text{Ag}^+/\text{Ag}} = +0.80\text{V}$; $E^{\circ}_{\text{Mg}^{2+}/\text{Mg}} = -2.37\text{V}$

$$E^{\circ}_{\text{cell}} = E^{\circ}_{\text{Mg}/\text{Mg}^{2+}} + E^{\circ}_{\text{Ag}^+/\text{Ag}}$$

$$= 2.37 + 0.80$$

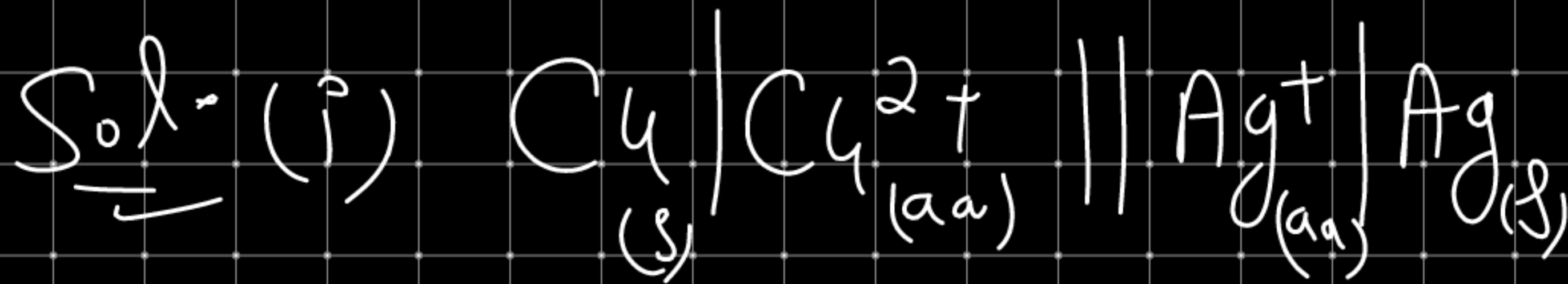
$$= 3.17\text{V}$$

Q.3. Galvanic cell is constructed by using

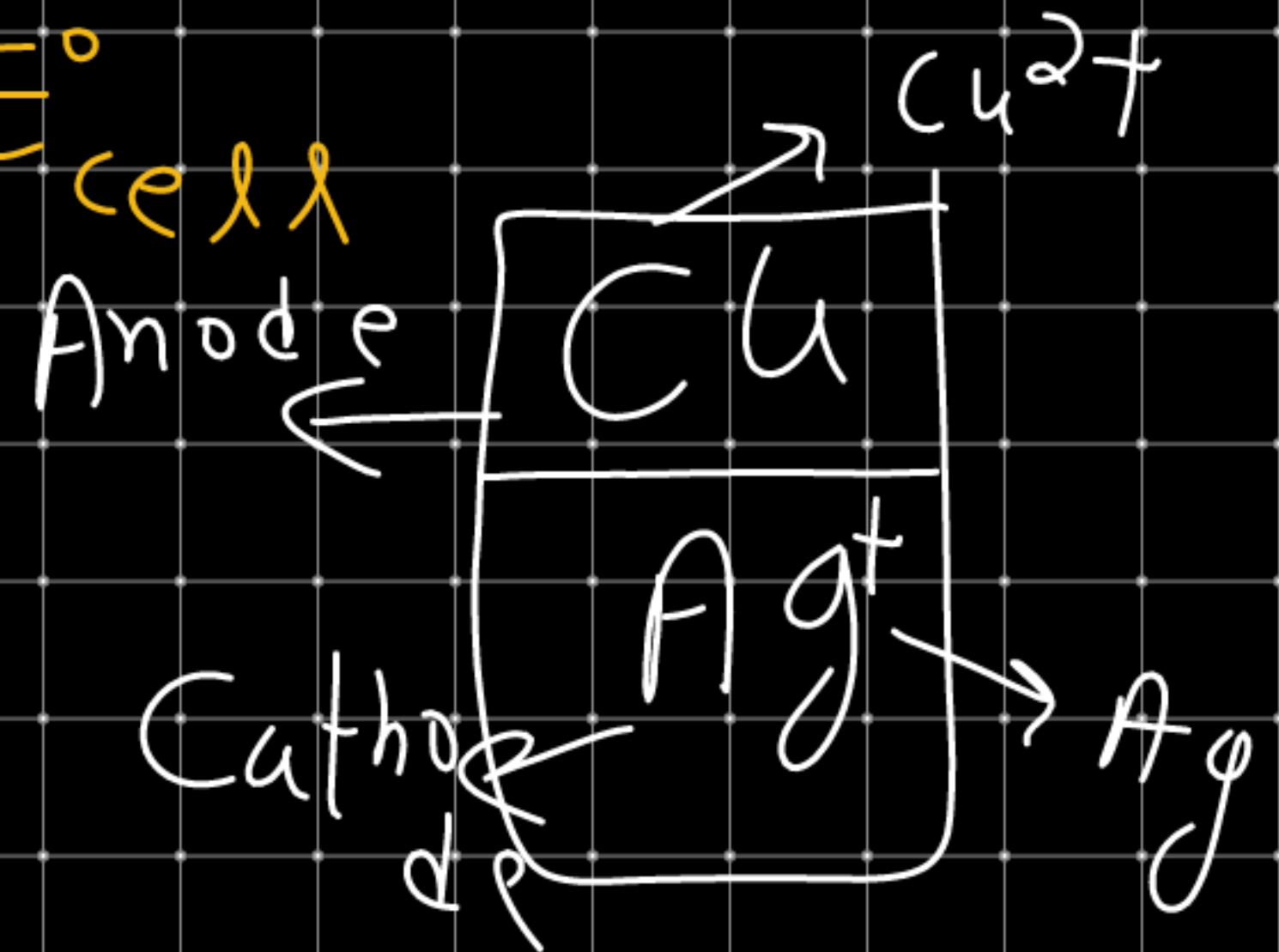
Ag & Cu electrodes. S.P.P. of Ag & Cu are $\xrightarrow{\text{Ag}^+|\text{Ag}}$ 0.80V & $\xrightarrow{\text{Cu}^{2+}|\text{Cu}}$ 0.34V respectively. Cell.

(i) Cell representation

(ii) E°_{cell}



(ii) $E^\circ_{\text{cell}} = E^\circ_{\text{Cu}/\text{Cu}^{2+}} + E^\circ_{\text{Ag}^+/\text{Ag}}$
 $= -0.34 + 0.80 = +0.46\text{V}$



Q. Mention the position of metal A, B, C, D, E and H_2 in E.C.S. on the basis of following Chemical Change -

