D. B. College (Joy nagar) Lect:-8
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eg $Cr_2O_7^{2-} + C_2O_4^{2-} \xrightarrow{H^+} Cr^{3+} + CO_2$

1st half $\overset{+6}{Cr_2}O_7^{2-} \longrightarrow Cr^{3+}$ (red)

2nd half $\overset{+3}{C_2}O_4^{2-} \longrightarrow \overset{+4}{CO_2}$ (oxid)

$Cr_2O_7^{2-} \longrightarrow 2Cr^{3+}$

$Cr_2O_7^{2-} \longrightarrow 2Cr^{3+} + 7H_2O$

$14H^+ + Cr_2O_7^{-2} \longrightarrow 2Cr^{3+} + 7H_2O$

$6e^- + 14H^+ + Cr_2O_7^{-2} \longrightarrow 2Cr^{3+} + 7H_2O$

$3 \times (C_2O_4^{2-} \longrightarrow 2CO_2 + 2e^-)$

$3C_2O_4^{2-} \longrightarrow 6CO_2 + e^-$

$14H^+ + Cr_2O_7^{2-} + 3C_2O_4^{2-} \longrightarrow 2Cr^{3+} + 7H_2O + 6CO_2$

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Eg $Mn_3O_7 \xrightarrow{H^+} Mn^{2+} + MnO_4^- + H_2O$

$Mn_3O_7 \xrightarrow{14/3=4} MnO_4^-$ (oxid.)

$Mn_3O_7 \longrightarrow Mn^{2+}$ (Red.)

$9e^{\ominus} + 6H^+ + Mn_3O_7 \longrightarrow 3MnO_4^- + 3H_2O$

$[8e^- + 14H^+ + Mn_3O_7 \longrightarrow 3Mn^{2+} + 7H_2O] \times 7$

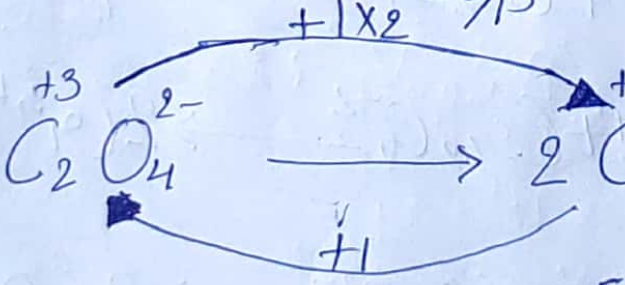
$[5H_2O + Mn_3O_7 \longrightarrow 3MnO_4^- + 10H^+ + 7e^{\ominus}] \times 8$

$98H^+ + 7Mn_3O_7 + 40H_2O + 8Mn_3O_7 \longrightarrow 21Mn^{2+} + 49H_2O + 24MnO_4^- + 80H^+$

$18H^+ + 15Mn_3O_7 \longrightarrow 21Mn^{2+} + 24MnO_4^- + 9H_2O$

$E = \frac{M}{n\text{-factor}} = \frac{M}{56/5}$

Eg



$E = \frac{M}{2}$ $E = \frac{M}{2/2} = \frac{M}{1}$

Eg $H_2O + SO_3^{2-} \longrightarrow SO_4^{2-} + 2H^+ + 2e^-$

$E = \frac{M}{2}$ $E = M/2$

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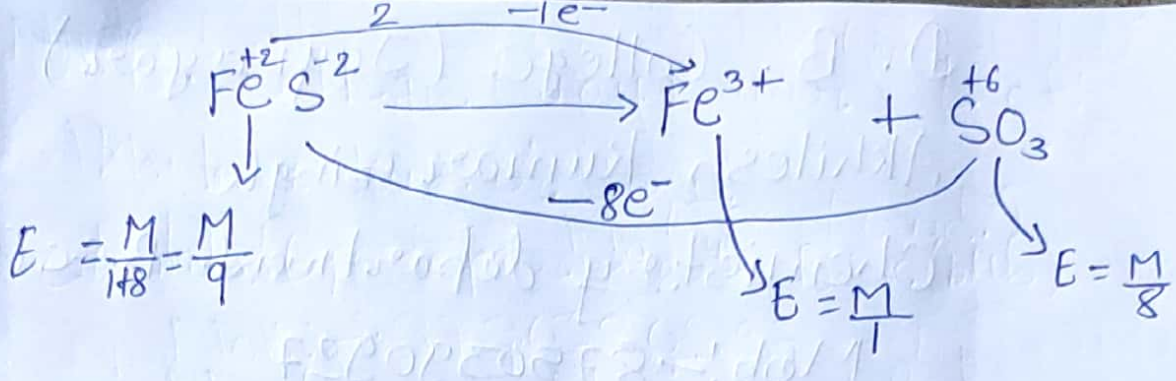
Eg



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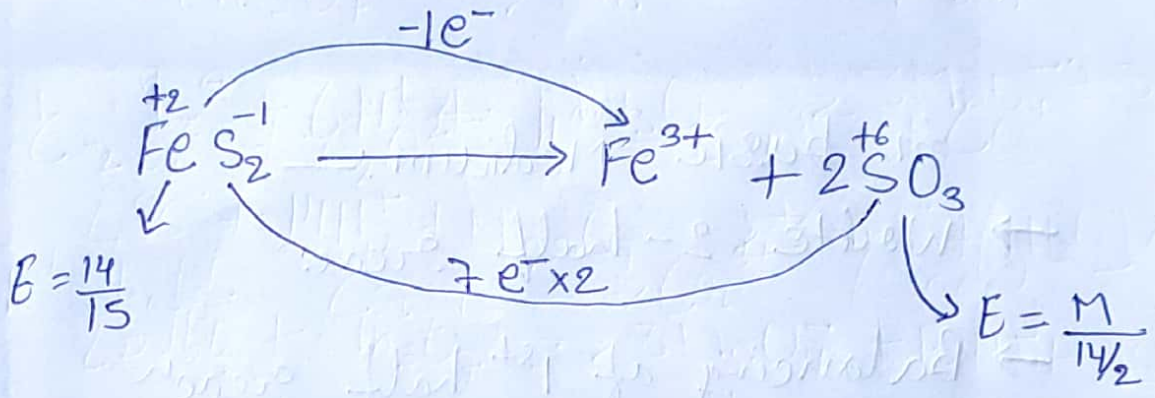
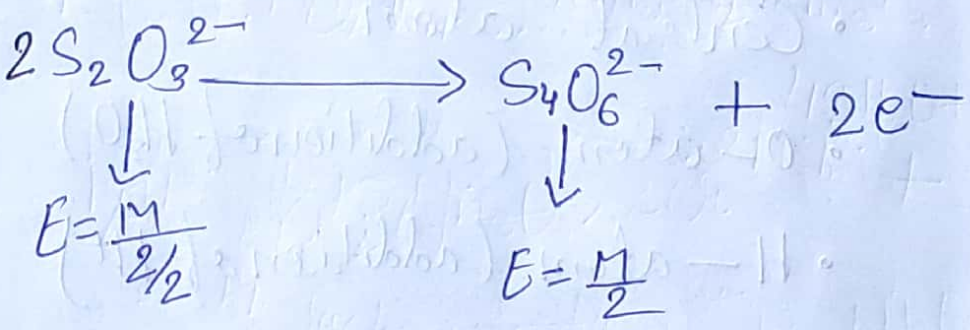


Eg



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