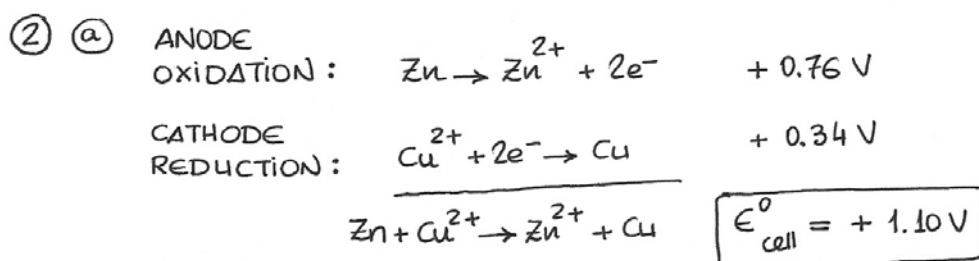
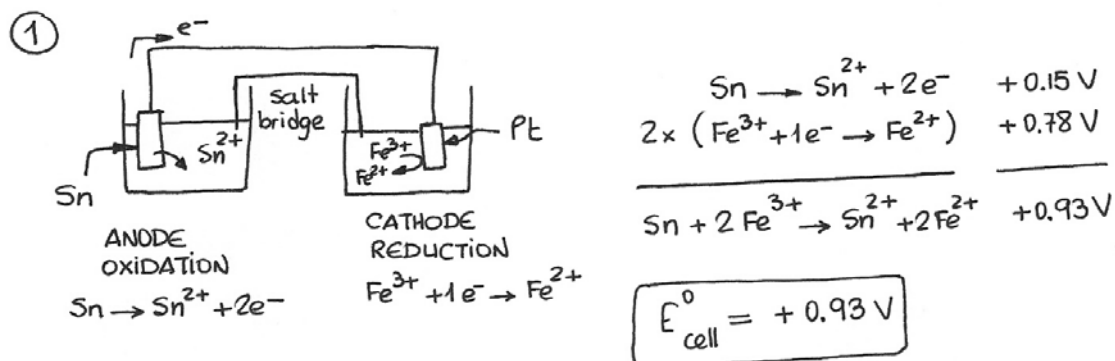


OXIDATION-REDUCTION: PROBLEMS



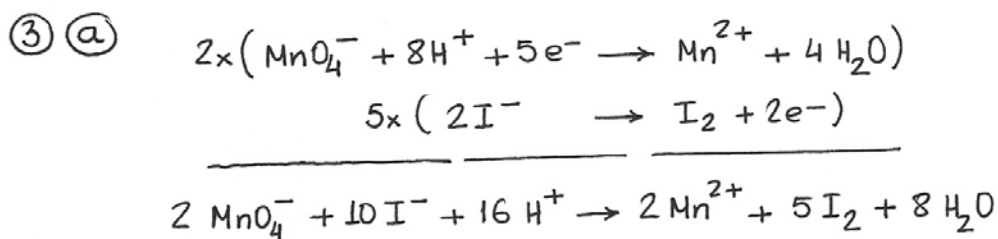
⑥ The charge that takes part in the reaction

$$q = I \times t = 0.045 \text{ A} \times 3600 \text{ s} = 162 \text{ C}$$

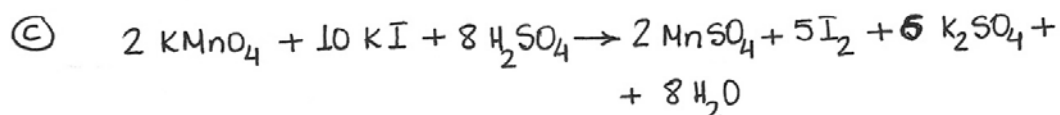
The amount of copper produced:

$$m = 162 \text{ C} \times \frac{1 \text{ mol } e^-}{96500 \text{ C}} \times \frac{1 \text{ mol Cu}}{2 \text{ mol } e^-} \times \frac{63.5 \text{ g Cu}}{1 \text{ mol Cu}}$$

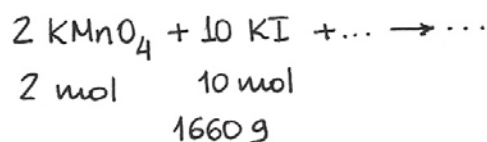
$m = 0.053 \text{ g Cu}$



(b) OXIDIZING: MnO_4^-
 REDUCTANT: I^-



(d)



$$M(\text{KI}) = 39 + 127 = 166 \text{ g/mol} \quad \uparrow$$

The # of moles of KMnO_4 needed to titrate 5g of KI:

$$n = 5 \text{ g KI} \times \frac{2 \text{ mol KMnO}_4}{1660 \text{ g KI}} = 6.02 \times 10^{-3} \text{ mol KMnO}_4$$

The volume needed:

$$[\text{KMnO}_4] = \frac{n(\text{KMnO}_4)}{V} \rightarrow V = \frac{n(\text{KMnO}_4)}{[\text{KMnO}_4]}$$

$$V = \frac{6.02 \times 10^{-3} \text{ mol}}{0.1 \text{ M}} = 6.02 \times 10^{-2} \text{ L} \rightarrow \boxed{V = 60.2 \text{ mL}}$$