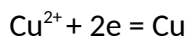**Answer on the question #63083, Chemistry / General Chemistry**

a current of 20 amp is maintained through a cupper sulphate solution using electrodes for 2 hours .calculate the mass amd moles of copper that would be tranfered from the anode to the cathode

Solution:

The transfer of the copper from the anode to the cathode occurs with electrons transfer:
Cu^{2+} + 2e = Cu
Mass of copper that would be transfered from the anode to the cathode can be calculated with the Faraday's law of electrolysis:

$$m(Cu) = \frac{I \cdot t \cdot M(Cu)}{F \cdot z} = \frac{20\,A \cdot 7200\,s \cdot 63.546\,g/mol}{96500\,C/mol \cdot 2\,electrons} = 47.4\,g$$

The mole number of the copper is equal to:

$$n(Cu) = \frac{m(Cu)}{M(Cu)} = \frac{47.4\,g}{63.546\,g/mol} = 0.75\,mol$$

Answer: m(Cu)=47.4 g, n(Cu)=0.75 mol