

Friday Worksheet

Name:

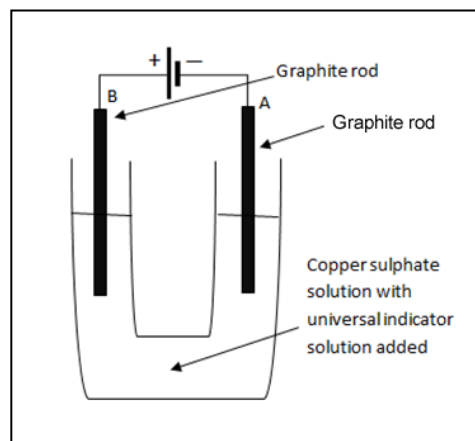
Electrolysis worksheet 10

1) Consider the electrolysis of a 0.100 M CuSO_4 solution using the apparatus shown below.

A current of 1.50 amperes is applied for 1.50 minutes.

The colour of Universal Indicator is shown at various pH values in the table below.

Colour	pink	yellow	green	blue	Violet
pH	3.0	5.0	7.0	9.0	11.0



(a) Write a balanced half-equation for the reaction occurring at **the:**
Anode –

Cathode –

(b) Assuming the solution is very dilute, what colour change(s), if any, would be expected at electrode A and electrode B. Briefly explain your answer.

(c) Which electrode will increase in mass during the electrolysis?

(d) Calculate the mass change of the electrode given as an answer to b) above.

2) Draw a galvanic cell represented by the two half cells below.
 $\text{Cl}_2 / \text{Cl}^-$ and Zn/Zn^{2+}

a) Indicate the :

- an appropriate substance for the salt bridge
- anode and cathode and their polarity as well as the equations to the reactions occurring at each electrode.
- direction of positive and negative ion flow as well as electron flow.
- The EMF of the cell

