

**PSBB LEARNING LEADERSHIP ACADEMY**

**2020-2021**

**CLASSWORK ASSIGNMENT**

**GRADE- VIII      SUBJECT –SCIENCE**

**The Effects of Electricity in Liquids**

1. Explain the term electrolysis

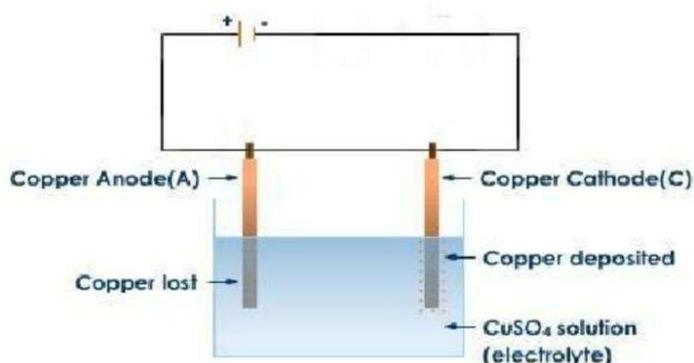
Electrolysis refers to the decomposition of a substance by an electric current. Example: When the current is passed through the molten sodium chloride, sodium and chlorine are deposited at different electrodes. Thus, sodium chloride is decomposed into sodium and chlorine.

2. Define electroplating. List two uses of this process.

The process of coating one metal over another with the help of electricity is called electroplating

This is usually done to make the objects more attractive ,or to prevent it from rusting.

3. Explain electrolysis of copper sulphate solution with diagram.

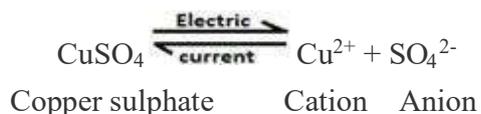


Electrolyte: Dilute copper sulphate solution

Anode: Copper electrode

Cathode: Copper electrode

Dissociation reaction:



#### Discharge of Ions at Electrodes

At Cathode (Negative electrode)	At Anode (Positive electrode)
Positively charged ions (cations) get attracted to the cathode and gain electrons from it to form neutral atom. i.e, Cu atom [metal].	Negatively charged ions (anions) get attracted to the anode and lose electrons from it to form neutral atom. i.e, Cu ions. The electrode used is copper electrode (anode) which is an active electrode and hence takes part in the electrolytic reaction.
Reaction at cathode: $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$ Cation +Electrons- $\rightarrow$ Metal	Reaction at anode: $\text{Cu} - 2\text{e}^- \rightarrow \text{Cu}^{2+}$ Copper - Electrons- $\rightarrow$ Ions Anode $\text{SO}_4^{2-}$ and $\text{OH}^-$ are not discharged.
Product formed at cathode: The blue copper ions are discharged as copper atoms [metal] at the cathode.	Product formed at anode: The copper (anode itself) ionizes to give copper ions at the anode. Anode thus gets transferred on to the cathode and the solution remains blue.

#### 4. Differentiate between conductor and electrolyte:

Conductor	Electrolyte
1. Conductors allow current to pass through them in the solid state	1. Electrolytes allow current to pass through them only in molten or aqueous state.
2. When the current passes through a conductor the conductor only gets heated up. It does not undergo any chemical decomposition.  Therefore, passage of an electric current through conductor is a physical change.	2. When current passes through an electrolyte the electrolyte undergoes decomposition and new substances are formed.  Therefore the passage of an electric current through electrolyte represents a chemical change
3. A current passes through a conductor due to the presence of free electrons.	3. A current passes through an electrolyte due to the presence of ions.