WORKSHEET 1

CHAPTER 6 – ELECTROLYSIS

A. Tick (✓) the correct option.

1. The ion/ions which is/are discharged during electrolysis of aqueous $CuSO_4$, using copper electrodes.
   a. Cu^{2+} b. SO_4^{2-} c. H^+ d. OH^-
2. The metallic electrode which does not take part in an electrolytic reaction.
   a. Ni b. Fe c. Ag d. Cu
3. A covalent compound which conducts electricity in aqueous state.
   a. C_2H_4 b. NH_3 c. CS_2 d. CCl_4
4. The cation which readily discharges at cathode.
   a. Cu^{2+} b. Pb^{2+} c. Fe^{2+} d. H^+
5. The anion which discharges at anode with great difficulty.
   a. OH^- b. SO_4^{2-} c. Br^- d. NO_3^-

B. Fill in the blanks from the choices given within the brackets.

1. The metal plate through which electric current enters in an electrolyte is called _____ (cathode/anode). It has _____ (deficiency/excess) of electrons.
2. The metal plate through which current leaves from an electrolyte is called _____ (cathode/anode). It has _____ (deficiency/excess) electrons.
3. The ions which discharge on negative electrode during electrolysis _____ (lose/gain) electrons. Thus, the ion is said to be _____ (cation/anion).
4. The ions which discharge on positive electrode during electrolysis _____ (gain/lose) electrons. Thus, the ion is said to be _____ (cation/anion).
5. Hydrogen and metallic ions are _____ (cation/anion) because they _____ (lose/gain) electrons.

C. Define the following terms.

1. Electrolysis
2. Electrode
3. Cathode
4. Anode
5. Anion

Name: ..... Teacher's signature: .....

Class: X Date: .....

D. Match the following.

1.	Non-electrolyte	Molten ionic compound
2.	Strong electrolyte	Carbon tetrachloride
3.	Weak electrolyte	An aluminium wire
4.	Metallic conductor	A solution containing solvent molecules, solute molecules and ions formed by the dissociation of solution molecules
		A sugar solution with sugar molecules and water molecules

E. Answer the following.

1. Write the name of a metal which is extracted by electrolysis.
2. At which electrode metal ions are discharged during electrolysis?
3. Give one important application of electrolysis.
   (Not extraction of metals or electroplating).
4. Why is electrolysis of acidulated water considered an example of catalysis?
5. If molten magnesium chloride is electrolysed, suggest a suitable anode.

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. Cu^{2+}
2. Fe
3. NH_3
4. Cu^{2+}
5. SO_4^{2-}

B. Fill in the blanks from the choices given within the brackets.

1. anode; deficiency
2. cathode; excess
3. gain; cation
4. lose; anion
5. cations; gain

C. Define the following terms:

1. **Electrolysis:** The process due to which a chemical compound in the fused state or in aqueous state conducts direct electric current, resulting in the discharge of ions of an electrolyte into neutral atoms at the electrodes is called electrolysis.
2. **Electrode:** The metal rods or plates through which the current enters or leaves an electrolyte are called electrodes.
3. **Cathode:** The electrode connected to the negative terminal of battery is called cathode.
4. **Anode:** The electrode connected to the positive terminal of battery is called anode.
5. **Anion:** The negatively charged ions which discharge at anode are called anions.

D. Match the following.

1. Non-electrolyte	Carbon tetrachloride and a sugar solution with sugar molecules and water molecules
2. Strong electrolyte	Molten ionic compound
3. Weak electrolyte	A solution containing solvent molecules, solute molecules and ions formed by the dissociation of solution molecules
4. Metallic conductor	An aluminium wire

E. Answer the following.

1. Aluminium.
2. Cathode.
3. Electro-refining of impure metals.
4. It is because, the amount of sulphuric acid does not change when water is electrolysed. The sulphuric acid just helps in increasing the conductivity of water.
5. Graphite anode. It is because graphite does not react with nascent chlorine.