



**Affiliation No. 1130703**

**Class Notes**

**CLASS: VIII    DIVISION: \_\_\_\_\_    SUBJECT: SCIENCE**

**PREPARED BY: Prathibha Hebbar    LESSON: 11 – CHEMICAL EFFECTS OF ELECTRIC CURRENT**

**Pre Activity** : - Write a short report on advantages and disadvantages of using LED

**Key Words** :

1. Electrode
2. Electroplating
3. LED
4. Anode
5. Cathode
6. Electrolysis
7. Electrolyte

**Q1. When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?**

Ans: The deflection of magnetic needle indicates electric current is flowing through the wire. It means the liquid or the solution is a good conductor of electricity. When the free ends of a tester are dipped into a solution, electric circuit is completed and an electric current pass through the solution.

**Q2. Name three liquids, which when tested in the manner shown in Fig.14.9, may cause the magnetic needle to deflect.**

Ans: Ground water, vinegar, citric fruit juice. The liquid solutions containing salts (basic or acidic) will conduct electricity.

**Q3. The bulb does not glow in the setup shown in below given figure List the possible reasons. Explain your answer.**

Ans: There may be the following possible reasons for not to glow:

1. Liquid solution in container is distilled water.
2. Bulb may be fused
3. The battery has already been exhausted, there are no sufficient charges (electric current) required for the bulb to glow.
4. Any loose connection (Air gaps) like electrodes is not properly connected wire.

**Q4. Does pure water conduct electricity? If not, what can we do to make it conduct?**

Ans: Pure or distilled water does not contain salts. Therefore, it is a poor conductor of electricity. We can add impurities like salt, lemon juice, vinegar etc. to make it conduct.

**Q5. In case of a fire, before the firemen use the water hoses, they shut off the main electrical supply for the area. Explain why they do this.**

Ans: The water usually contains salts and is a good conductor of electricity. To save themselves and others from electric shock and to avoid any short circuit, firemen shut off the main electrical supply for the area.

**Q6. A child staying in a coastal region tests the drinking water and also the seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?**

Ans: Drinking water is chemically treated and purified by removing various impurities and salts from it. While the sea water contains lots of mineral salts. Therefore, sea water produces more ions (more electric charges) as compared to drinking water and the child sees more deflection in magnetic needle in case of sea water.

**Q7. Is it safe for the electrician to carry out electrical repairs outdoors during heavy downpour? Explain.**

Ans: No, it is very risky and unsafe to carry out electric repairs outdoors during heavy downpour. Water (when impure) is a good conductor of electricity and there are chances of getting electric shock.

**Q8. Paheli had heard that rainwater is as good as distilled water. So, she collected some rainwater in a clean glass tumbler and tested it using a tester. To her surprise she found that the compass needle showed deflection. What could be the reasons?**

Ans: Air in our surroundings contains gasses, suspended dust particles and pollutants. These particles get dissolved in rainwater and make it good conducting medium of electricity.

**Q9. Prepare a list of objects around you that are electroplated.**

Ans: Cold drink cans are tin plated. Artificial Jewelry items are silver or gold-plated. Car bumpers and cycle handles are chromium plated. Metal doors, door handles are zinc plated.

**Q10. The process that you saw in Activity 14.7 is used for purification of copper. A thin plate of pure copper and a thick rod of impure copper are used as electrodes. Copper from impure rod is sought to be transferred to the thin copper plate. Which electrode should be attached to the positive terminal of battery and why?**

Ans: Impure Copper plate should be connected to positive terminal. Pure copper plate should be connected to negative terminal of electrode as copper ions are positively charged and will attract to negative electrode terminal.

**Q11. What is meant by electroplating? Describe the electroplating of copper on an iron strip.**

Ans: Electroplating: The method of coating the metal's surface of a given article with a thin layer of superior metal with the help of electric current is called electroplating.

The method of electroplating of copper on an iron strip is as follows:

- The object to be electroplated, i.e., an iron strip is made cathode (negative electrode).
- A thin sheet of pure copper is made anode (positive electrode).
- An acidified solution of copper sulphate is used as an electrolyte, taken in an electrolytic tank.
- When electric current is passed through the acidified copper sulphate solution, copper is passed from copper sulphate solution gets deposited on the surface of iron strip, forming a reddish layer of copper metal all over the iron strip. Thus, electroplating of copper on an iron strip is done.

**Post Activity :** - Find out the health concerns associated with chromium electroplating

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