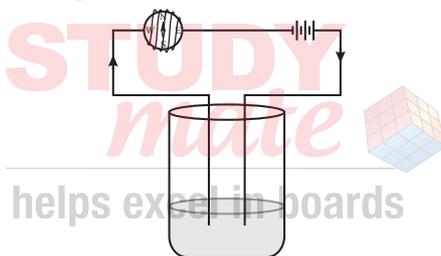


1. Fill in the blanks.

- Most liquids that conduct electricity are solutions of _____ and _____.
- The passage of an electric current through a solution causes _____ effects.
- If you pass current through copper sulphate solution, copper gets deposited on the plate connected to the _____ terminal of the battery.
- The process of depositing a layer of any desired metal on another material by means of electricity is called _____.

Sol. (a) acids, bases and salts (b) chemical
(c) negative (d) electroplating

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

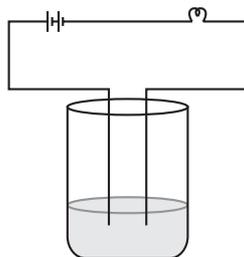


Sol. Yes, it is because the solution conducts electricity and solution plays the role of cell.

3. Name three liquids, which when tested in the manner shown in the figure, may cause the magnetic needle to deflect.

Sol. It may be the salt, acid and base in water.

4. The bulb does not glow in the setup shown in figure. List the possible reasons. Explain your answer.



Sol. The possible reasons are:

- (i) The solution may be conducting electricity but the current produced is too small, so that the filament of the bulb does not get heated and the bulb does not glow.
 - (ii) It is possible that the connections are loose.
 - (iii) The cells are used up.
5. A tester is used to check the conduction of electricity through two liquids, labelled A and B. It is found that the bulb of the tester glows brightly for liquid A while it glows very dimly for liquid B. You would conclude that
- (i) liquid A is a better conductor than liquid B.
 - (ii) liquid B is a better conductor than liquid A.
 - (iii) both liquids are equally conducting.
 - (iv) conducting properties of liquid cannot be compared in this manner.

Sol. Liquid A is better conductor than liquid B.

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

Sol. Pure water does not conduct electricity. It can be made conducting if acid, base or salt is dissolved in it.

7. 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.

Sol. The water used to extinguish fire, has a lot of minerals and dissolved salt, which make it conducting. Before throwing water into the burning houses and the mains of electricity of the area is shut off because then the water may conduct huge current and firemen get electric shock.

8. 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?

Sol. The impure water is a conductor of electricity. Sea water contains more impurity than drinking water found in the coastal region. Therefore, sea water conducts more electricity than drinking water. That is why, the compass needle deflects more in the case of sea water.

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

Sol. When it rains heavily, the rain water dissolves many impurities from the atmosphere, which make it impure and very conductive of electricity. The air becomes humid with this water and becomes very conductive. That is

why, it is not wise for electrician to do electrical repair work when it rains heavily, because he may get dreadful shock or even gets electric shock.

- 10.** 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?

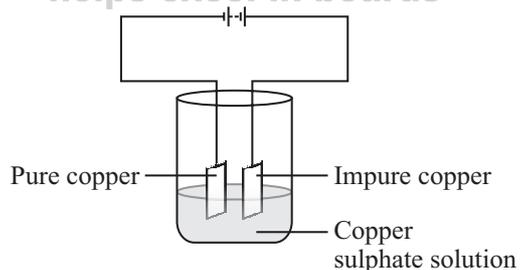
Sol. Rain water is, of course, as good as distilled water but, when it passes through atmosphere, it dissolves a lot of dust, dirt and impurities and become conducting. So, when Paheli used a tester, its compass showed deflection.

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

Sol. The objects which are electroplated are:

- (i) Taps of water connection.
- (ii) Parts of bicycle.
- (iii) Body of cars, motor cycle and tractors.
- (iv) Handles of the doors.

- 12.** The process that you see in the activity given below 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 the battery and why?



Sol. The thick rod of impure copper should be attached to the positive terminal of battery. This is because the free copper of the solution will get deposited on the thin rod and the loss of copper from the solution will be restored from the thick rod to the positive terminal of the battery. Thus, copper from the thick rod could be extracted out.