

**Q1. Which of the following liquids conduct electricity & which do not conduct electricity?**

Lemon juice, Milk, Vinegar, Salt solution, Distilled water, Honey, Sea water, Rain water.

Ans: Conducting: Lemon juice, Vinegar, Salt solution, sea water, Rain water  
Non Conducting: Milk, Distilled water, Honey.

**Q2. What is advantage of using LED over bulb in testing the electrical conductivity of liquids?**

Ans: When electric current flows through a bulb then due to heating effect of current, the filament of the bulb gets heated up to a high temperature & it starts glowing. Now for a liquids having low electrical conductivity, the current flowing through the circuit is very weak due to which the filament does not get heated sufficiently & hence the bulb does not glow. Therefore LED is used in place of bulb because LED glows even when weak electric current flows in the circuit.

**Q3. Which effect of electric current is utilized for detecting the flow of current through a solution:**

a) When a torch bulb is used? b) When a magnetic compass is used?

Ans: a) Heating effect      b) Magnetic effect.

**Q4. Distilled water does not conduct electricity. What substances can be added to distilled water in small amounts to make it a good conductor of electricity?**

Ans: Salt, acid & base.

**Q5. In case of a fire, before the fireman uses the water hoses to throw water to douse fire, they shut off the electricity supply for the area. Explain why this is done?**

Ans: To prevent electrocution of fireman because ordinary water is conductor of electricity.

**Q6. When the free ends of a conductivity tester (made by using a battery connected to a wire wound around a compass) are dipped into a solution, the magnetic needle shows deflection. Can you give the reason of this deflection?**

Ans: Electric current flowing through the wire produces a magnetic field around it. And this magnetic field of electric current acts on the magnetic needle of compass & deflects it.

**Q7. What effects does an electric current produce when flowing through a conducting solution?**

Ans: When an electric current flows through the conducting solution, it causes a chemical reaction (or chemical change). These chemical reactions may produce following effects:

- i) Bubbles of gas/es may be formed on the electrodes.
- ii) Deposits of metals may form on electrodes.
- iii) Change in colour of solution may occur.

**Q8. When electric current is passed through acidified water then what is produced at**

- a) Positive carbon electrode (anode)?
- b) Negative carbon electrode (cathode)?

Ans: a) oxygen gas b) hydrogen gas.

**Q9. Which effect of electric current is utilized when a thin layer of chromium metal is deposited on an iron tap? What is this process known as?**

Ans: Chemical effect of current is utilized. The process is known as electroplating.

**Q10. What is meant by electroplating? What is the purpose of electroplating?**

Ans: The process of depositing a layer of any desired metal on another material, by means of electricity, is called electroplating. Electroplating is done

- i) for protection against corrosion (or rusting).
- ii) for decorative purposes.

**Q11. Which properties of chromium metal make it suitable for electroplating it on car bumpers, bath taps & bicycle hand bars, etc., made of iron?**

Ans It has shiny appearance. It does not corrode easily. It resists scratches.

**Q12. Which metal is electroplated on iron for making 'cans' used for storing food & Why?**

Ans: Tin. Tin metal has shiny appearance, it does not corrode & it is non poisonous. Tin is less reactive than iron. Due to tin plating over the surface of iron, the food does not come in contact with iron & is protected from getting spoilt.

**Q13. For electroplating copper on an iron object, which terminal of the battery is connected to the iron objects?**

Ans: Negative terminal of the battery

**Q14. In the process of purification of copper metal, a thin plate of pure copper & a thick rod of impure copper are used as electrodes & a metal salt solution is used as an electrolyte:**

**a) Which electrode is connected to the positive terminal of the battery?**

**b) Which electrode is connected to the negative terminal of the battery?**

**c) Which metal salt solution is taken as electrolyte?**

Ans: a) Thick rod of impure copper. b) Thin rod of pure copper. c) Copper sulphate solution.

**Q15. Write down the important points which should be remembered while electroplating?**

Ans: i) The metal on which electroplating is to be done should be cathode i.e., the negative electrode.

ii) The metal to be deposited should be anode i.e., the positive electrode.

iii) A water soluble salt of the 'metal to be deposited' is taken as the electrolyte.

**Q16. On what factors the chemical effect produced by an electric current depends?**

Ans: The chemical effect produced by an electric current depends on the nature of conducting solution (through which it is passed), & on the nature of electrodes used for passing the electric current