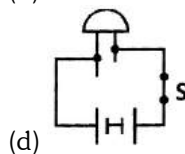
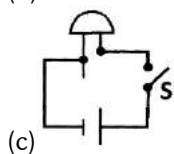
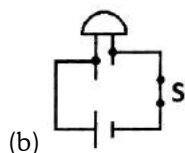
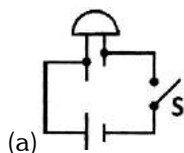




Chemical Effects of Electric Current

1. What is current?
 - (a) The flow of matter
 - (b) The flow of electrons
 - (c) The flow of protons
 - (d) The flow of charge
2. In electrolytic solutions, which of the following acts as carrier of charge?
 - (a) Protons
 - (b) Electrons
 - (c) Neutrons
 - (d) Ions
3. What are insulators?
 - (a) Materials that conduct electricity
 - (b) Materials that do not conduct electricity
 - (c) Materials that conduct electricity only at low temperatures
 - (d) Materials that conduct electricity at room temperature
4. Which of the following is an insulator?
 - (a) Wood
 - (b) Iron
 - (c) Graphite
 - (d) Silver
5. Which of the following circuits gives the correct way of connecting an LED to light it up?

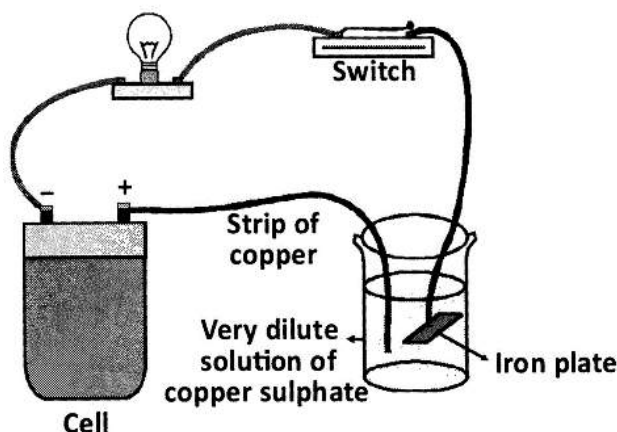


6. Which of the following energy conversions takes place in a cell?
 - (a) Electrical energy into chemical energy
 - (b) Chemical energy into electrical energy
 - (c) Magnetic energy into electrical energy
 - (d) Electrical energy into mechanical energy
7. Which of the following are the characteristics of an electrolyte?
 - (a) It has a positive charge.
 - (b) It has a negative charge.
 - (c) It conducts charge without dissociating.
 - (d) It forms positive and negative ions.
8. Which acid is present in lemon juice that acts as an electrolyte?
 - (a) Sulphuric acid
 - (b) Nitric acid
 - (c) Hydrochloric acid
 - (d) Citric acid

9. Which of the following is the electrolyte in a dry cell?
(a) Copper sulphate
(b) Zinc sulphate
(c) Sulphuric acid
(d) Ammonium chloride
10. In a dry cell, which of the following acts as the positive terminal?
(a) Carbon rod
(b) Manganese dioxide
(c) Manganese dioxide and powdered carbon
(d) A metal cap on the carbon rod
11. What is the common voltage produced by a dry cell?
(a) 1.5 V (b) 30 V
(c) 60 V (d) 3 V
12. What happens when electric current is made to flow through a conductor?
(a) Some amount of electrical energy is converted into heat energy.
(b) Some amount of electrical energy is converted into mechanical energy.
(c) Some amount of mechanical energy is converted into electrical energy.
(d) Some amount of heat energy is converted into electrical energy.
13. Nichrome is an alloy. Which of the following metals make up this alloy?
(a) Nickel and chromium
(b) Nitrogen and chromium
(c) Nitrogen, chlorine and chromium
(d) Nickel, chromium and manganese
14. What is the splitting of a compound using electricity called?
(a) Electrolysis (b) Electrolyte
(c) Electro kinesis (d) Electrochemistry
15. What is the principle involved in the glowing of an electric bulb?
(a) Magnetic effect of current
(b) Heating effect of current
(c) Chemical effect
(d) Conduction of current
16. Why are LED's extensively used to replace bulbs?
- | |
|--|
| (i) Consume less electricity
(ii) Have longer life
(iii) Have more power |
|--|
- (a) Only (i) and (ii)
(b) Only (ii) and (iii)
(c) Only (i) and (iii)
(d) (i), (ii) and (iii)
17. Which of the following is the best conductor of electricity?
(a) Tap water
(b) Distilled water
(c) Sea water
(d) Rain water

- 18.** Which of the following effects of current is responsible for the deflection of a compass needle in an electric field?
- (a) Heating effect of current
 - (b) Magnetic effect of current
 - (c) Conducting effect of heat
 - (d) Chemical effect of current
- 19.** Which of these is the industrial applications of the chemical effects of electric current?
- (a) Electroplating
 - (b) Galvanising
 - (c) Anodising
 - (d) All of the above
- 20.** Which of the following liquids is a bad conductor of electricity?
- (a) Lemon juice
 - (b) Vinegar
 - (c) Sea water
 - (d) Distilled water
- 21.** Cans used for storing food are electroplated. What is the material used for electroplating?
- (a) Chrome onto tin
 - (b) Iron onto tin
 - (c) Tin onto iron
 - (d) Chrome onto iron
- 22.** What is iron coated with in order to protect it from corrosion and rust?
- (a) Tin
 - (b) Copper
 - (c) Zinc
 - (d) Mercury
- 23.** Why is zinc better than tin for electro- plating a piece of iron in order to prevent it from rusting?
- (a) Zinc is cheaper than tin.
 - (b) Tin is toxic.
 - (c) Zinc can prevent iron from coming into contact with water and air.
 - (d) Rusting is prevented even when the zinc layer is broken.
- 24.** Which of the following statements is correct?
- (a) Distilled water is a good conductor of electricity.
 - (b) An LED glows even when a weak electric current flows through it.
 - (c) Only hydrated salt solutions conduct electricity.
 - (d) Zinc plating is done to make the object scratch proof.
- 25.** 'X' is a good conductor of electricity. Which of the following could be 'X'?
- (a) Solid sodium chloride
 - (b) Vinegar
 - (c) Distilled water
 - (d) Liquid oxygen
- 26.** In a cell, by convention, from where does the charge seem to be flowing through?
- (a) From positive electrode to negative electrode
 - (b) From negative electrode to positive electrode
 - (c) Both (A) and (B)
 - (d) Cannot be said

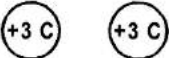



- 27.** Why are metals good conductors of electricity?
 (a) In metals/outer electrons are strongly bound to the atom.
 (b) In metals, outer electrons are loosely bound to the atom.
 (c) In metals, inner electrons are loosely bound to the atom.
 (d) In metals, protons can detach from the nucleus and conduct electricity.
- 28.** Why are cans used for storing soft drinks or food items usually electroplated with tin?
 (a) Tin is less reactive than the metal the can is made of.
 (b) Tin is cheap.
 (c) Tin is strong and shiny in appearance
 (d) Tin is lighter than other metals.
- 29.** A During the electrolysis of CuSO_4 solution, sulphate ions move towards the
 (a) copper electrode.
 (b) anode.
 (c) cathode.
 (d) zinc electrode.
- 30.** A bulb does not glow when the probe are hanging in air. Why?
 (a) Air absorbs electricity.
 (b) Air is a bad conductor of electricity.
 (c) Electricity is discharged into air.
 (d) Air disperses electricity.
- 31.** Iron vessels are coated with tin to
 (a) give better shining.
 (b) increase the strength.
 (c) increase weight.
 (d) prevent rusting.
- 32.** Observe the given figure.



What is the purpose of this experimental setup?

- (a) To check the conductivity of copper sulphate solution.
 (b) To get iron electroplated.
 (c) To check the continuity of charge flow in the circuit.
 (d) To make the electric bulb glow.

- 33.** What is the process of depositing a layer of a desired metal on another material by passing electric current called?
- (a) Electrolysis
 - (b) Electroplating
 - (c) Chromium plating
 - (d) Galvanising
- 34.** Which of the following statements is NOT correct?
- (a) The ions are free to move about in an electrolyte.
 - (b) The solution which can form ions is used for electroplating.
 - (c) Acids are bad conductors of electricity.
 - (d) An electric bulb glows due to the heating effect of current.
- 35.** The charges present on the various objects are shown below in the figure. In which of the following cases does a force of repulsion act between them?

- (a) 
- (b) 
- (c) 
- (d) 

Answers With Solutions

1. (d) Current is the flow of charge.
2. (d) In electrolytic solutions, electrolyte splits into positive and negative ions. The charge is moved through ions.
3. (b) Insulators are substances that do not conduct electricity.
4. (a) Wood is an insulator while iron, graphite and silver are good conductors of electricity.
5. (b) An LED has two leads. One lead is slightly longer than the other. The longer lead is always connected to a positive terminal of the battery while the shorter lead is always connected to a negative terminal of the battery.
In circuit (B) switch is present and is in its ON position. Only this makes the LED glow.
6. (b) In a cell, chemical energy is converted into electrical energy.
7. (d) The characteristic of an electrolyte is that it should be able to form positive and negative ions.
8. (d) Citric acid is present in the lemon juice which acts as an electrolyte.
9. (d) The electrolyte in a dry cell is ammonium chloride.
10. (d) In a dry cell, metal cap on the carbon rod acts as a positive terminal.
11. (a) The common dry cell produces a voltage of 1.5 V
12. (a) When electric current flows through a conductor, some amount of electrical energy is converted into heat energy.
13. (a) Nichrome is an alloy of nickel and chromium.
14. (a) Electrolysis is the splitting of a compound using electricity.
15. (b) Due to the heating effect of current, the filament of the bulb gets heated to a high temperature and it starts glowing.
16. (d) LED's are extensively used to replace bulbs because they consume less electricity, have longer life and have more power.
17. (c) Sea water is saline and so, it is a good conductor of electricity.
18. (b) Magnetic effect of current is responsible for the deflection of a compass needle in an electric field.
19. (d) Electroplating is the most common industrial application of chemical effects of electric current as are galvanising and anodising.
20. (d) Distilled water or pure water is a bad conductor of electricity.

- 21.** (c) Tin, being less reactive than iron, is used for coating cans meant for storing food items.
- 22.** (c) To protect iron from corrosion and rust, it is coated with zinc.
- 23.** (d) Zinc can be better than tin for protecting iron from rusting because, zinc being highly electropositive can prevent rusting even when the layer is broken.
- 24.** (b) An LED glows even when a weak electric current flows through it.
- 25.** (b) Vinegar is a good conductor of electricity. Hence, X is vinegar.
- 26.** (a) In a cell, by convention, charge is taken to be flowing from positive electrode to negative electrode.
- 27.** (b) In metals, the attractive force on outermost electrons towards nucleus is feeble due to which they become free from atom when they get a little energy from outside. Such electrons are free to move anywhere inside the metal, but they are not free to move outside the metal.
- 28.** (a) Cans used for storing soft drinks or food items are usually electroplated with tin because tin is less reactive than the base metal with which the can is made of. Tin does not contaminate the food or soft drink. It also does not get corroded.
- 29.** (b) Anions move towards anode as they are negatively charged.
- 30.** (b) A bulb does not glow when the probes are hanging in air, because air is a bad conductor of electricity.
- 31.** (d) Since, tin is less reactive than iron, iron vessels are coated with tin to prevent rusting. Thus, food does not come into contact with iron and is protected from getting spoiled.
- 32.** (b) The process of depositing a layer of any desired metal on another metal by passing electricity is called electroplating. The iron plate in the experiment is being coated with copper.
- 33.** (b) Electroplating is the process of depositing a layer of a desired metal on another material by passing electric current.
- 34.** (c) Acids are good conductors of electricity. Most of the liquids which conduct electricity are solutions of acids, bases and salts.
- 35.** (a) Two like charges each of 3C experience a force of repulsion between them. A force of attraction exists between two unlike charges or between a charged and an uncharged body.