Chapter - 14th

Electric current and it's Effect

1) Draw in your notebook the symbols to represent the following components of electrical circuits; connecting wires, switch in the 'OFF' position, bulb, cell, switch in the 'ON' position and battery.

Answer ↓

1) Connecting wires →

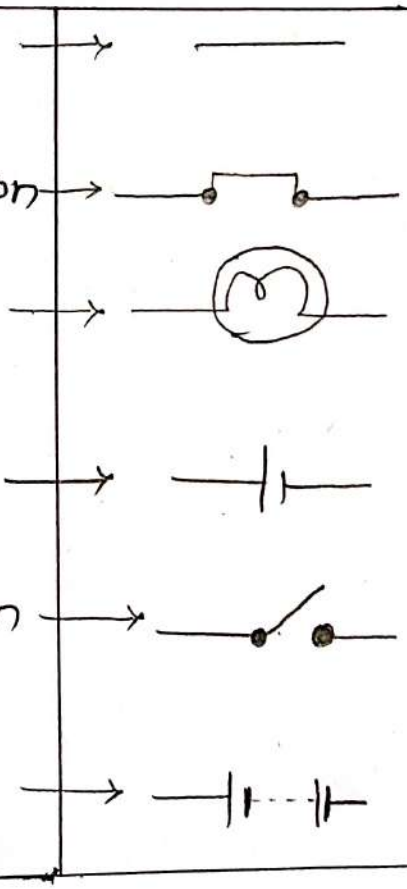
2) switch in 'on' position →

3) Bulb →

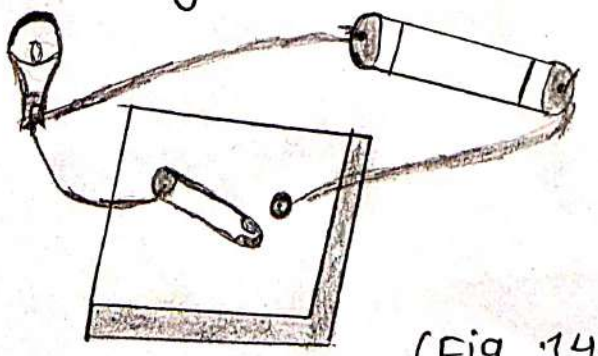
4) Cell →

5) switch in 'off' position →

6) Battery →

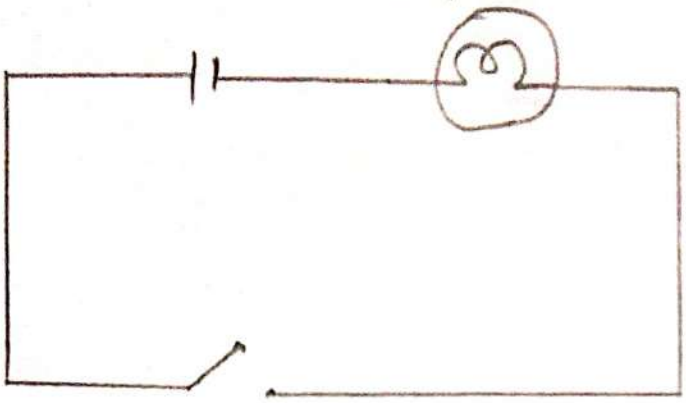


2) Draw the circuit diagram to represent the circuit shown in fig 14.21

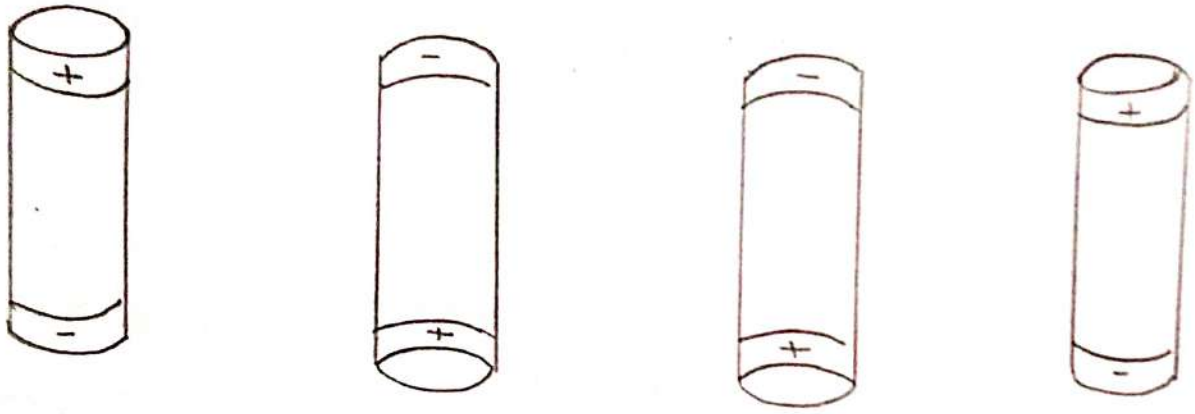


(Fig 14.21)

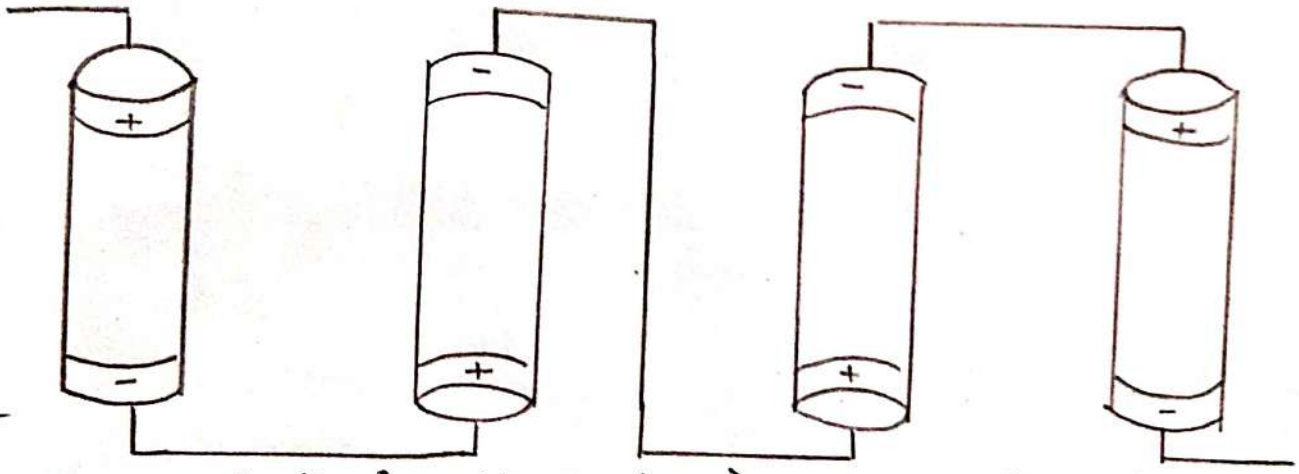
Ans ↓



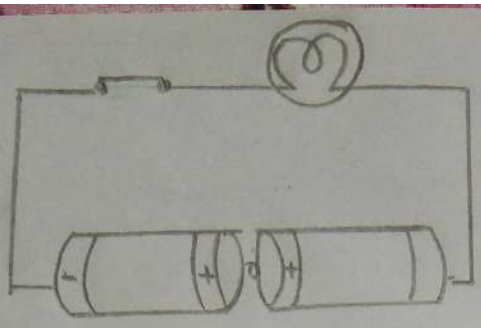
3) Fig 14.22 shows four cells fixed on a board, Draw lines to indicate



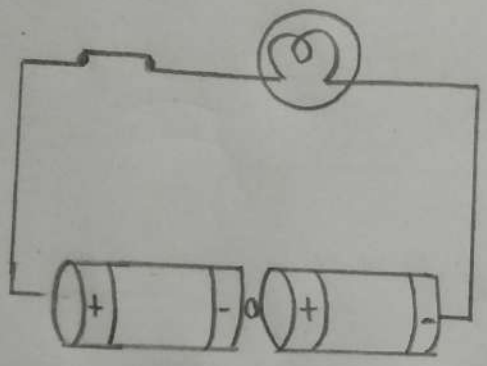
Ans.



4) The bulb in the circuit shown in Fig 14.23 does not glow. Can you identify the problem? Make necessary change in the circuit to make the bulb glow.



Ans → problem is this circuit is the combination of two cells. In the circuit positive terminal of one cell should be connected with negative terminal of other to make the bulb glow.



5) Name any two effects of electric current.

Ans → Electric current has the following effect:

1) Electric current can give rise to heating and lighting.

2) Electric current can convert a straight conductor into a temporary magnet.

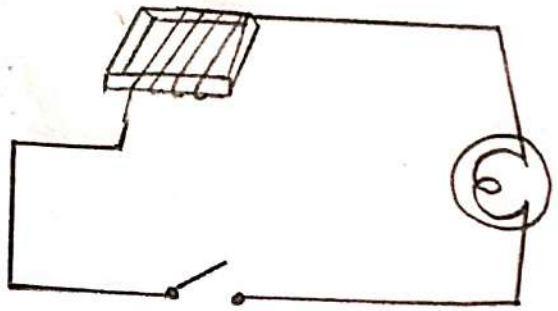
6) When the current is switched on through a wire, a compass needle kept nearby gets deflected from its north-south position. Explain?

Ans → When current is passed through the wire, it deflects the compass near it from its north-south position like a magnet. This is called magnetic effect of the current.

As we know that needle of the compass is made up of a thin magnet. When this needle comes in contact with another magnet then the like poles of the magnet repel each other and opposite poles attract each other.

7) Will the compass needle show deflection when the switch in the circuit shown by Fig. (14.24) is closed

A



Ans → No, because there is no source of electric current in this circuit. i.e. there is no battery.

Q.8) Fill in the blanks.

a) Longer line in the symbol for a cell represents its _Positive_ terminal.

b) The combination of two or more cells is called a _battery_.

c) When current is switched 'on' in a room heater, it _become red hot_ and emits _heat_.

d) The safety device based on the heating effect of electric current is called a _fuse_.

9) Mark 'T' if the statement is true and 'F' if it is false.

a) To make a battery of two cells, the negative terminal of one cell is connected to the negative termined of the other cell. (F)

b) When the electric current through the fuse exceeds a certain limit, the fuse wire melts and breaks. (T)

c) An electromagnet does not attract a piece of iron. (F)

d) An electric bell has an electromagnet. (T)

10) Do you think an electromagnet can be used for separating plastic bags from a garbage heap ~~help~~.? Explain.

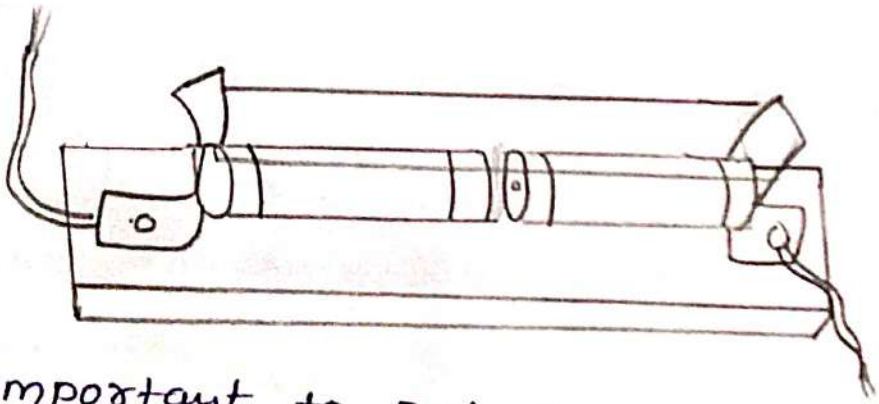
Ans → No, the plastic bag do not get attracted by the magnet, so they cannot be separted by an electromagnet. plastic bags are not magnetic material, only Magnetic material like iron can be attracted by the magnet.

11) An electrician is carrying out some repairs in your house. He want to replace a fuse by a piece of wire. would you agree. Give reason for your response.

Ans → No, we would not agree to allow to replace the fuse by a wire. Wires in the fuses are of specific melting point. So we should always use ISI marked fuses in our houses to prevent short circuit.

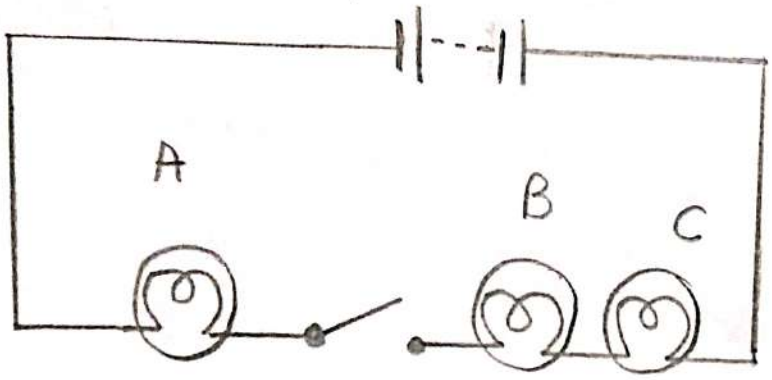
12) Zubeda made an electric circuit using a cell holder shown in fig. 14.4, a switch and a bulb. When ~~we put~~ she put the switch in the 'ON' position, the bulb did not glow. Help Zubeda in identifying the possible defects in the circuit.

Ans →



It is important to put the cells in right series. The positive terminal of the first cell should be connected with negative terminal of the second cells. The switch should be closed properly and bulb should not be fused. If Zubeda will check these then the bulb will certainly glow.

Q.13) In the circuit shown in Fig(14.25)



i) Would any of the bulb glow when the switch is in the 'OFF' position

ii) What will be the order in which the bulbs A, B, and C will glow when the switch is moved to the 'ON' position

Ans → i) No, the bulb will not glow as the circuit is not complete when the switch is off.

ii) If the switch is on, all the bulb glow simultaneously.