

#637926

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.

Solution

Connecting wires



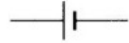
Switch in 'on' position



Bulb



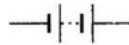
Cell



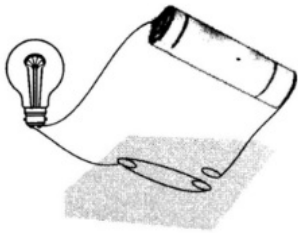
Switch in 'off' position



Battery

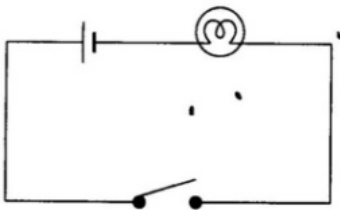


#637927



Draw a circuit diagram to represent the circuit shown in figure.

Solution



#637928

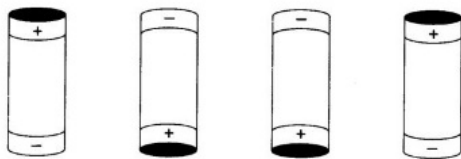
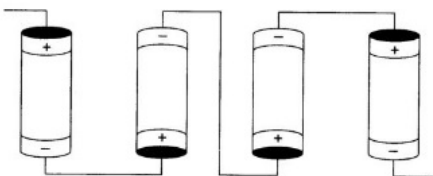
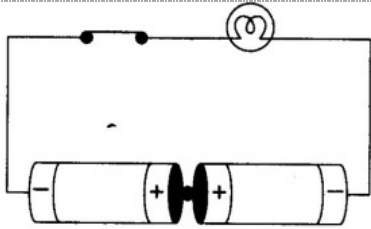


Figure shows four cells fixed on a board. Draw lines to indicate how you will connect their terminals with wires to make a battery of four cells.

Solution



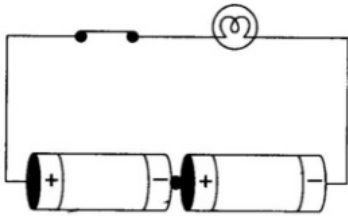
#637929



The bulb in the circuit shown in figure does not glow. Can you identify the problem? Make necessary changes in the circuit to make the bulb glow.

Solution

Problem in 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.



#637930

Name any two effects of electric current.

Solution

Electric current has the following effect.

- (i) Electric current can give rise to heating and lighting.
- (ii) Electric current can convert a straight conductor into a temporary magnet.

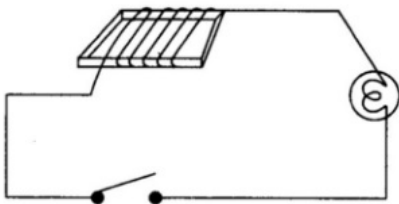
#637931

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

Solution

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. So the deflection is seen in the needle. In this case the wire behaves like a magnet and causes deflection in needle of the compass.

#637932



Will the compass needle show deflection when the switch in the circuit shown in figure is closed?

Solution

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

#637933

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

Answer: Positive

#637934

The combination of two or more cells is called a _____.

Answer: Battery

#637935

When current is switched 'on' in a room heater, it changes to which color _____.

Answer: red

#637936

The safety device based on the heating effect of electric current is called a _____.

Answer: Fuse

#637937

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

A True

B False

#637938

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

A True

B False

#637939

An electromagnet does not attract a piece of iron.

A True

B False

#637940

An electric bell has an electromagnet.

A True

B False

#637941

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

Solution

No, the plastic bags do not get attracted by the magnet, so they cannot be separated by an electromagnet. Plastic bags are not magnetic materials, only magnetic materials like iron can be attracted by the magnet.

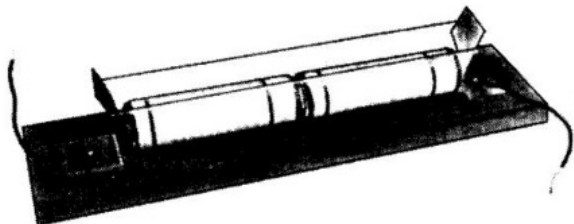
#637942

An electrician is carrying out some repairs in your house. He wants to replace a fuse by a piece of wire. Would you agree? Give reasons for your response.

Solution

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

#637943

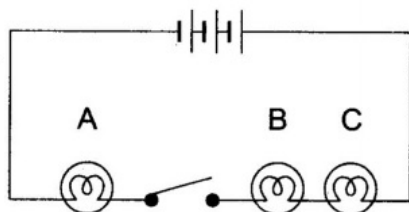


Zubeda made an electric circuit using a cell holder shown in figure, a switch and a bulb. When she put the switch in the 'ON' position, the bulb did not glow. Help Zubeda in identify the possible defects in the circuit.

Solution

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 cell. The switch should be closed properly and bulb should not be fused. If Zubeda will check these then the bulb will certainly glow.

#637944



In the circuit shown in the figure.

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?

Solution

I) No, none of the bulb will glow when the switch is the off position.

II) All the bulbs will glow at once because connection are ok.