

Very Short Answer Questions

Q. 1. Why is a layer of zinc coated over iron? [NCERT Exemplar]

Ans. A coating of zinc is provided to protect iron from corrosion and rust.

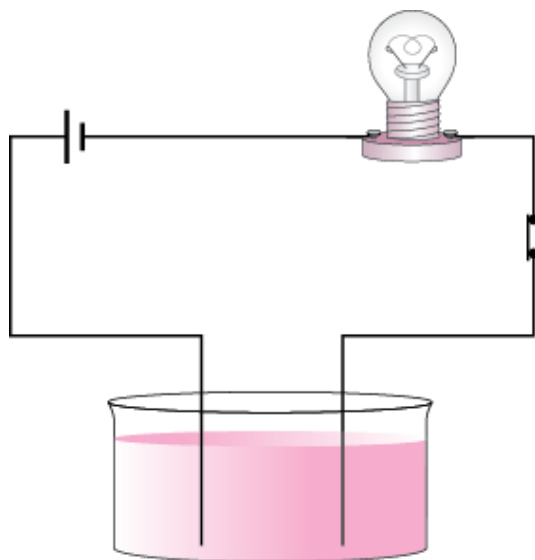
Q. 2. Will the solution of sugar in distilled water conduct electricity? [NCERT Exemplar]

Ans. No

Q. 3. Name the effect of current responsible for the glow of the bulb in an electric circuit. [NCERT Exemplar]

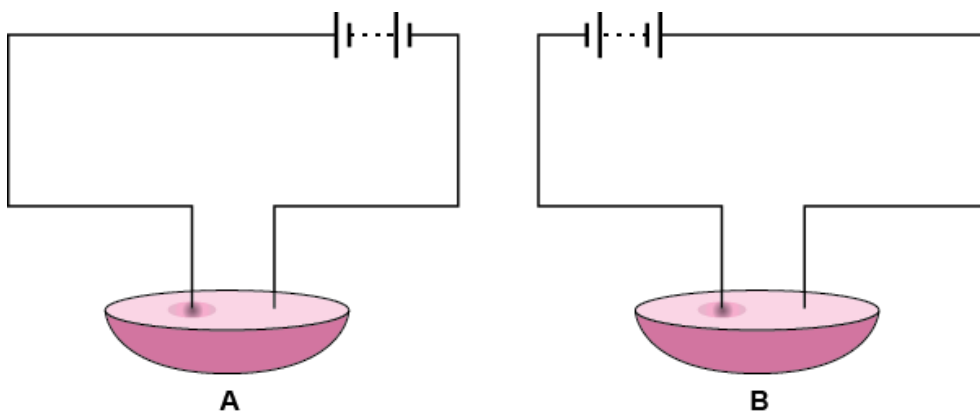
Ans. Heating effect of electric current.

Q. 4. Boojho made the circuit given in figure and observed that the bulb did not glow. On Paheli's suggestion he added one more cell in the circuit. The bulb now glows. Explain.



Ans. Addition of another cell increased the current through the bulb sufficiently to make it glow.

Q. 5. Observe the figure given below.



Which of these two circuits A or B shows the correct observation? [NCERT Exemplar]

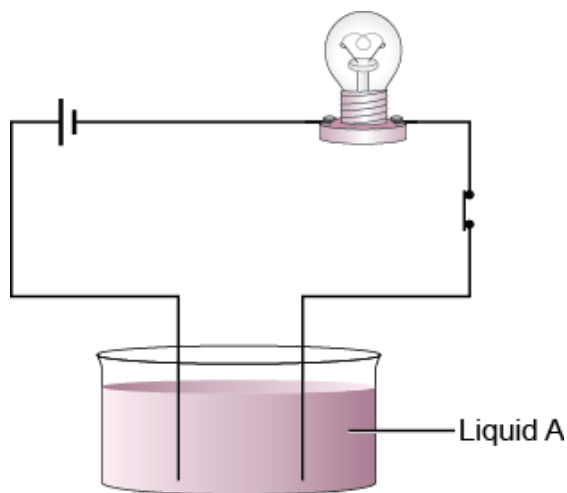
Ans. Circuit A shows the correct observation.

Q. 6. During electrolysis of water what is formed at anode?

Ans. Hydrogen

Short Answer Questions

Q. 1. Paheli set up an experiment using liquid A in the beaker as shown in figure alongside. She observed that the bulb glows. Then she replaced the liquid A by another liquid B. This time the bulb did not glow. Boojho suggested replacing the bulb by an LED. They observed that the LED glows. Explain. [NCERT Exemplar]



Ans. The current through liquid B could be weak and therefore unable to make the bulb glow. However, it was strong enough for the LED to glow.

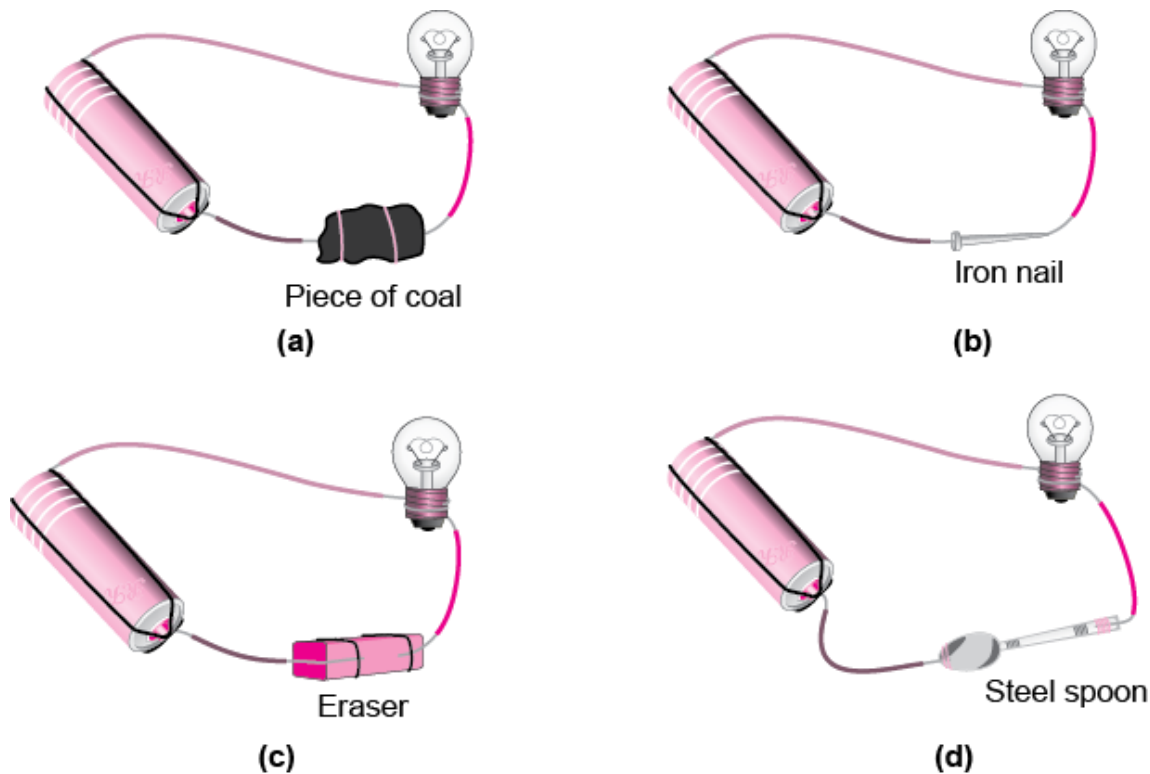
Q. 2. Paheli wants to deposit silver on an iron spoon. She took silver nitrate (AgNO_3) solution in a beaker and set up a simple circuit for electroplating. Which terminal of the battery should the spoon be connected to? What material should the other electrode be made of? [NCERT Exemplar]

Ans. The spoon should be connected to the negative terminal of the battery. The other electrode should be made of silver

Q. 3. Why is tin electroplated on iron to make cans used for storing food? [NCERT Exemplar]

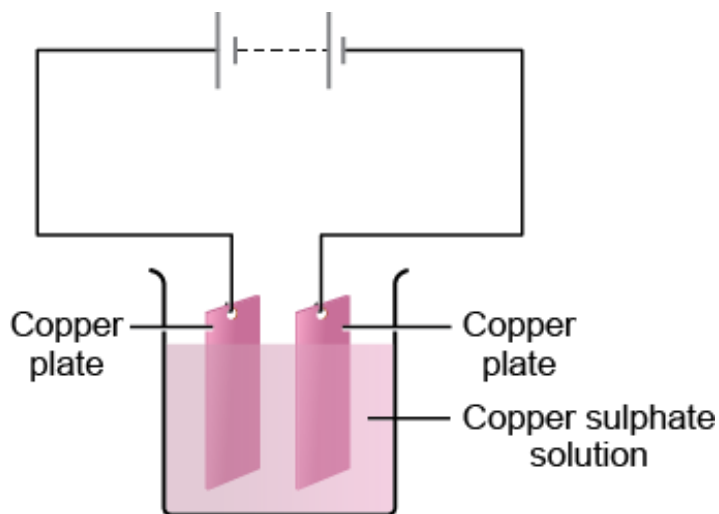
Ans. Tin is less reactive than iron. Tin coating prevents food from coming in contact with iron and thus prevents it from getting spoiled.

Q. 4. Observe the following circuits carefully. In which circuit will the bulb glow? [NCERT Exemplar]



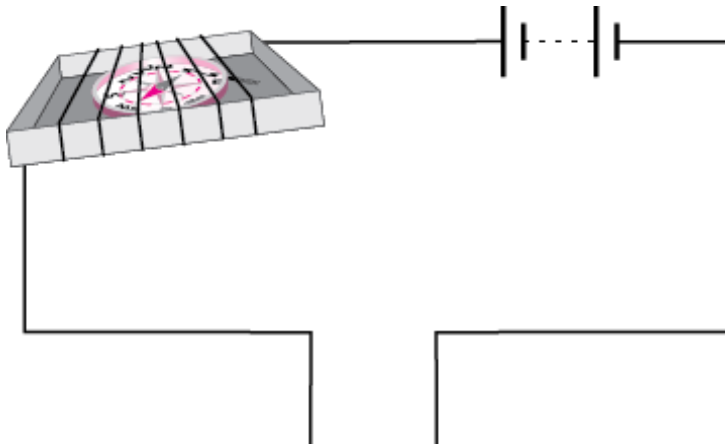
Ans. In circuit (b) and (d).

Q. 5. In the circuit given below, Boojho observed that copper is deposited on the electrode connected to the negative terminal of the battery. Paheli tried to repeat the same experiment. But she could find only one copper plate. Therefore she took a carbon rod as negative electrode. Will copper be still deposited on the carbon rod? Explain your answer. [NCERT Exemplar]



Ans. Yes, copper from the copper sulphate solution will be deposited on the carbon rod. Copper from the copper plate will be dissolved into the copper sulphate solution for electroplating.

Q. 6. Observe the following circuit given below.



Current does not flow in the circuit if there is a gap between the two wires. Does it indicate that air is a poor conductor of electricity? Does air never conduct electricity? Explain. [NCERT Exemplar]

Ans. Yes, air is a poor conductor of electricity. No, under certain conditions, such as during lightning, air may conduct electricity.

Long Answer Questions

Q. 1. An electric current is passed through a conducting solution. List four possible observations. [NCERT Exemplar]

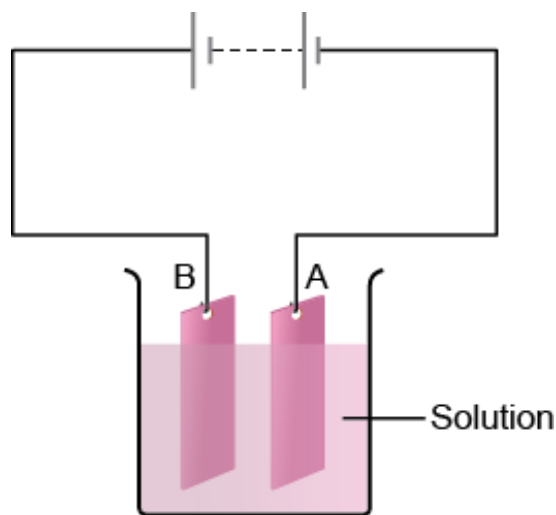
Ans. (a) Bubbles of gas may be formed on the electrodes.

(b) Deposits of metal may be seen on electrodes.

(c) Change in the colour of the solution may take place.

(d) The solution may get heated.

Q. 2. Observe the circuit given below.



Boojho set up this circuit for purification of copper. What will be the nature of

a. plate A,

b. plate B,

c. the solution?

[NCERT Exemplar]

Ans. a. Plate A: Pure copper

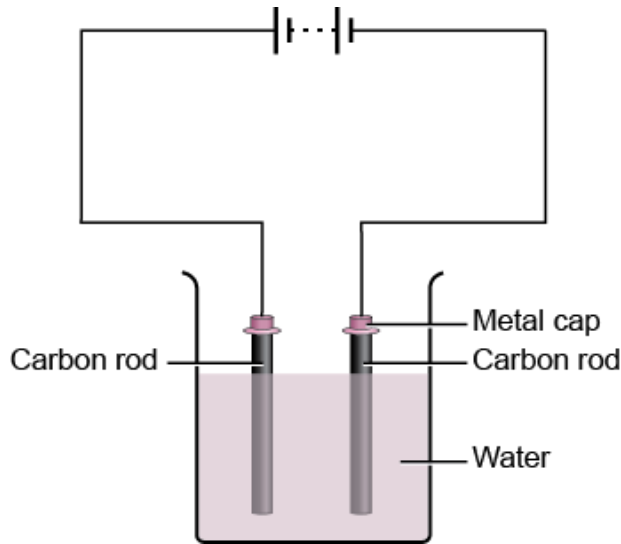
b. Plate B: Impure copper

c. The solution: Copper sulphate

Copper from impure copper plate is transferred to the pure copper plate by the process of electroplating.

Q. 3. Boojho made the circuit shown alongside. He wanted to observe what happens when an electric current is passed through water. But he forgot to add a few drops of lemon juice to water. Will it make any difference to his

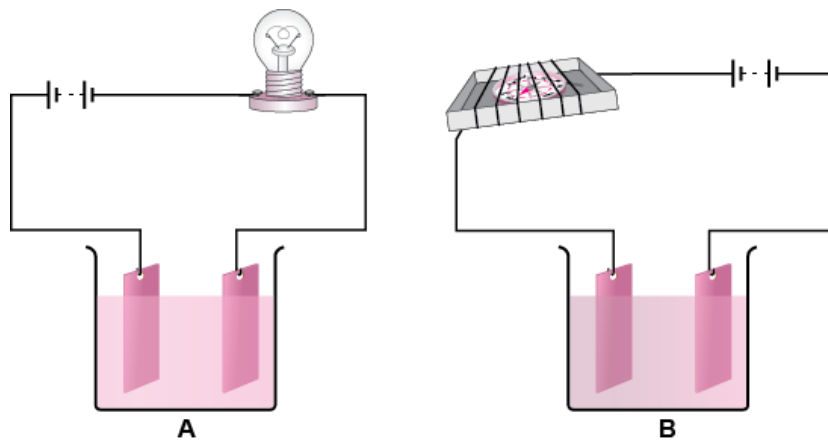
observations? Explain.
[NCERT Exemplar]



Ans. If the water is distilled water and lemon juice is not added, no current will pass through the circuit. This is because distilled water does not contain any dissolved salts in it to conduct electricity. If the water taken is salty, then a feeble current will pass through the circuit and bubbles will be seen on the negative electrode.

Q. 4. Observing that the bulb does not glow in the circuit shown below in A, Boojho changed the circuit as shown in B. He observed deflection in the magnetic compass.

[NCERT Exemplar]



- What does the deflection in magnetic compass indicate?
- Why did the bulb not glow in A?
- What would be the effect of increase in the number of turns in the coil wound around the magnetic compass in B?
- What will be observed if the number of cells is increased in the circuit shown in B?

Ans. (a) It indicates the presence of current in the circuit.

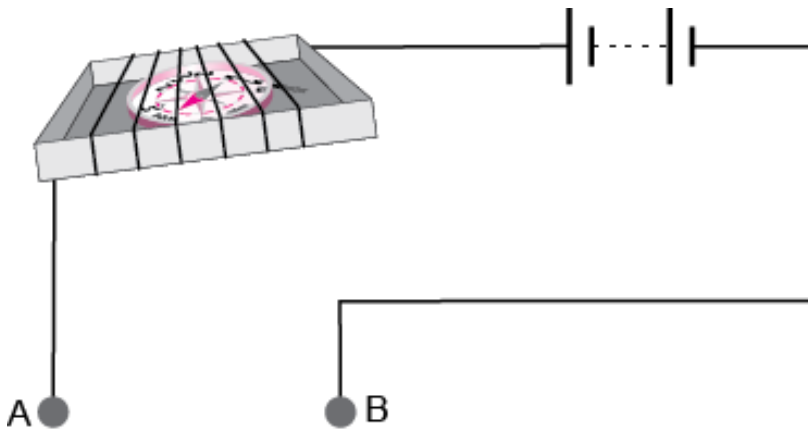
(b) The bulb did not glow because the current was not sufficient to make it glow.

(c) Deflection in the magnetic compass will increase.

(d) Deflection in the compass will increase further

Q. 5. You are provided with a magnetic compass, an empty matchbox, a battery of two cells and connecting wires. Using these objects how will you make a tester for testing an electric circuit? Draw the necessary circuit diagram and explain. [NCERT Exemplar]

Ans.



Whenever current flows through the circuit the magnetic compass needle shows deflection due to magnetic effect of current.

Q. 6. Why chromium is used for electroplating? Why the objects which have chromium plating are not made of chromium itself?

Ans. Chromium has a shiny appearance, does not corrode so it is used for electroplating. Because chromium is expensive so, the objects may not to be as a whole by it.

Hots (Higher Order Thinking Skills)

Q. 1. Why chromium is used for electroplating? Why the objects which have chromium plating are not made of chromium itself?

Ans. Chromium has a shiny appearance, does not corrode so it is used for electroplating. The objects which have chromium plating are not made of chromium itself because chromium is very expensive.