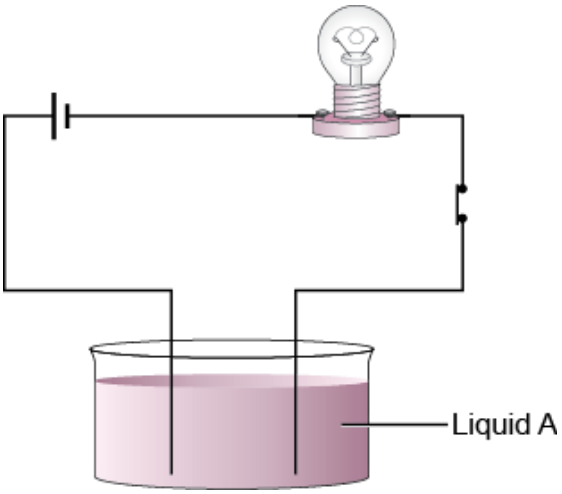
Short Answer Questions

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.

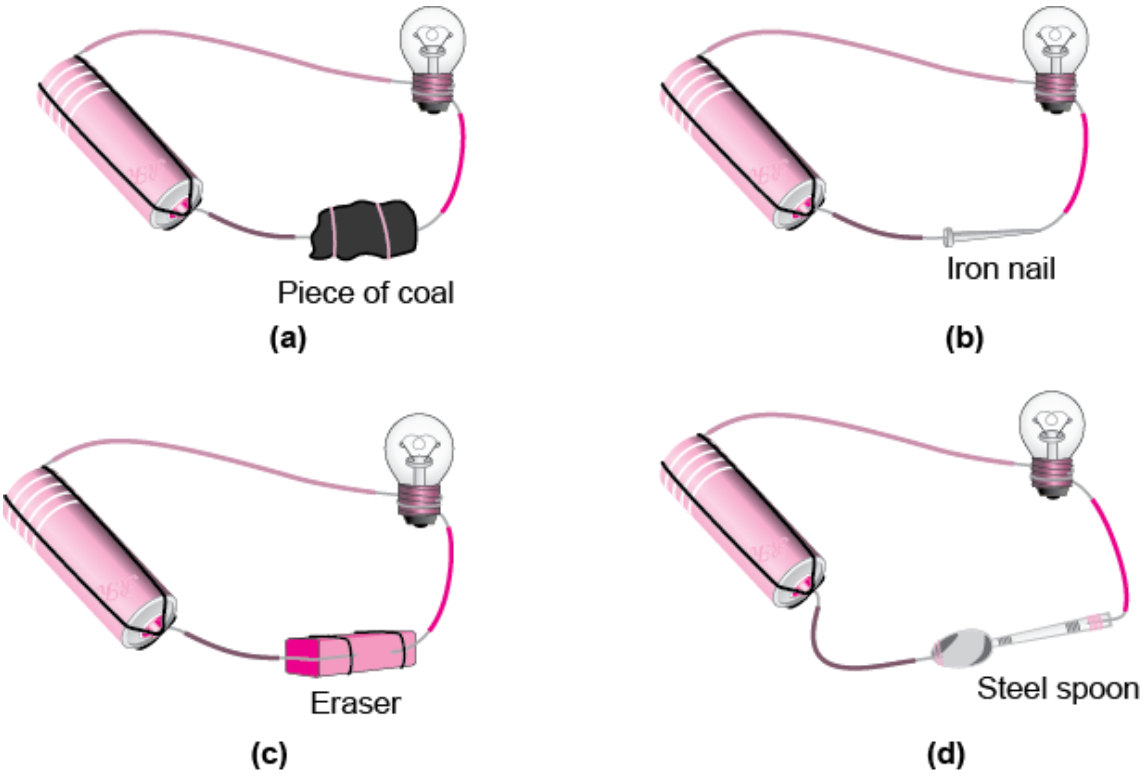
Q. 2. Paheli wants to deposit silver on an iron spoon. She took silver nitrate ($AgNO_3$) solution in a beaker and set up a simple circuit for electroplating. Which terminal of the battery should the spoon be connected to? What material should the other electrode be made of? [NCERT Exemplar]

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]

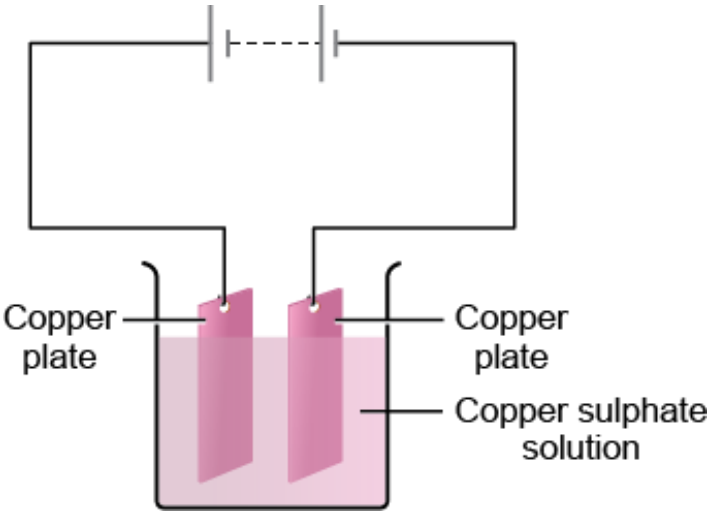
Ans. Tin is less reactive than iron. Tin coating prevents food from coming in contact with iron and thus prevents it from getting spoiled.

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



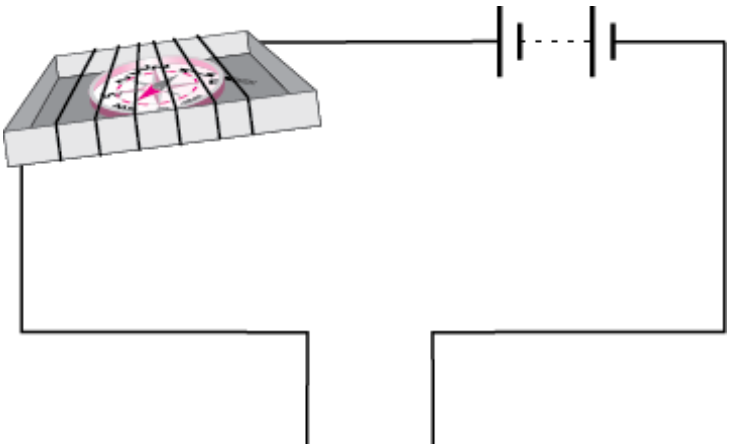
Ans. In circuit (b) and (d).

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.