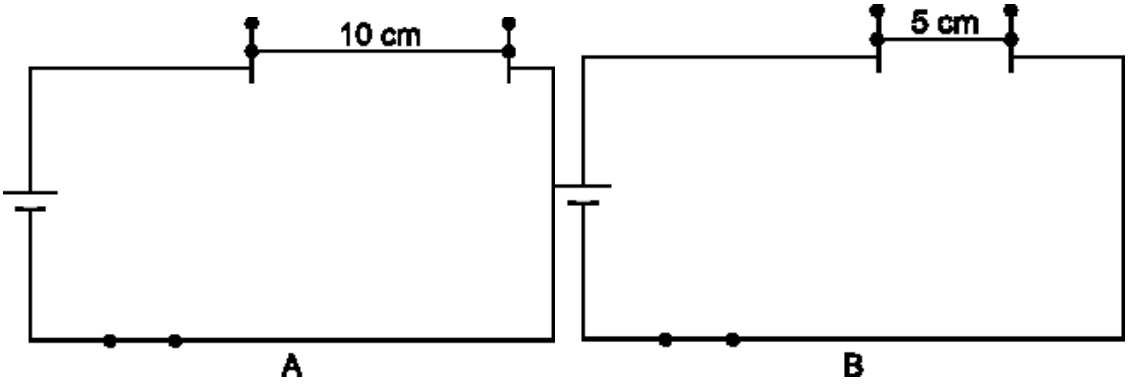
Long Answer Questions

Q.1. Paheli took a wire of length 10 cm. Boojho took a wire of 5 cm of the same material and thickness. Both of them connected the wires as shown in the circuit given in figure. The current flowing in both the circuits is the same.

a. **Will the heat produced in both the cases be equal? Explain.**
b. **Will the heat produced be the same if the wires taken by them are of equal lengths but of different thickness? Explain.**



[NCERT Exemplar]

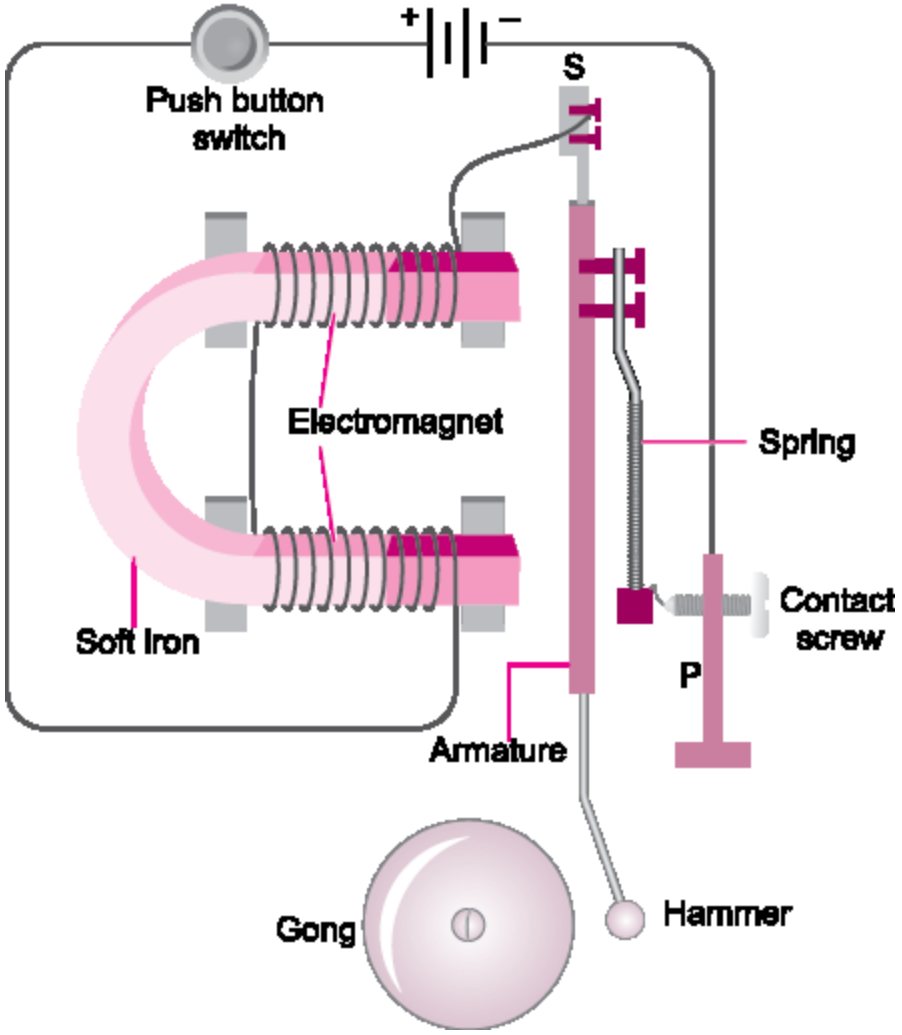
Ans. **(a)** No, the amount of heat produced in both the cases will not be equal. Amount of heat produced in a wire depends upon the length of the wire.

(b) No, the amount of heat produced in the wire depends upon the thickness of the wire.

Q.2. How does the magnetic effect of electric current help in the working of an electric bell? Explain with the help of a diagram.

[NCERT Exemplar]

Ans.



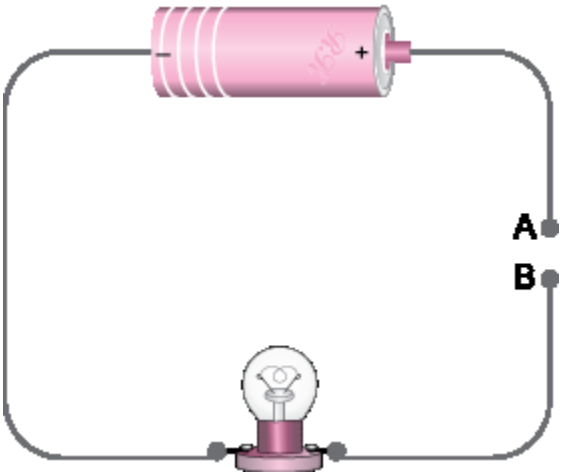
Working of an electric bell:

- When the bell is pressed, the contact screw touches the iron strip and the circuit is completed.
- The current starts flowing through the coil.
- The electromagnet becomes magnetised and the soft iron armature is attracted towards the electromagnet. The movement of the iron causes the hammer to hit the gong.
- This movement breaks the circuit at point P, so that the current stops flowing and switches off the electromagnet.
- The spring pulls the armature back to its original position, the circuit is remade and the process starts over again. This is how the bell rings.

Q.3.Describe a simple experiment to show that the bulb lights up when an electric circuit is complete and vice-versa.

Ans.

- Take a dry cell, a small torch bulb (fitted with a holder) and a copper connecting wire.
- Connect the dry cell, the bulb and the copper wire as shown below.
- Leave a gap in this connection and mark it as AB.
- Due to the gap AB the electric circuit is not complete and therefore the bulb does not glow.
- Take a pencil and fit it in the gap AB. You will find that the bulb glows as the circuit is complete.



Q.4. Distinguish between the following.

Q. Cell and Battery

Ans.

S. No.	Cell	Battery
(i)	A cell is a singular unit that produces electric current.	A battery is composed of many cells.
(ii)	A cell can be a battery.	A battery cannot be a cell.
(iii)	The symbol of a cell is. 	The symbol of a battery is .

Q. An Open Switch and A Close Switch

Ans.

S. No.	Cell	Battery
(i)	An open switch does not allow current to pass through the circuit	A close switch allows current to pass through the circuit.
(ii)	The bulb does not glow when switch is open.	The bulb glows when the switch is closed.

(iii)	It is represented as. 	It is represented as.