

Board – ICSE

Class – 7th

Topic – Electricity and Magnetism

1. State two properties of a bar magnet

Ans: Properties of a bar magnet

- i) Attractive property: A magnet attracts small pieces of iron, cobalt or nickel.
- ii) Directive property: A magnet when suspended freely, always point towards North and South direction.
- iii) Like poles, i.e. North and North or South and South poles repel each other.
- iv) Unlike poles i.e. North and South attract each other.
- v) Poles always exist in pairs, i.e. poles of a magnet cannot be separated.

2. State two precautions that you must take when switching on an electric circuit.

Ans:

- i. See that all the components of the circuit are properly connected.
- ii. See that the connection wire is tightly connected to each appliance or component.
- iii. Do not touch the switch or any component with wet hands.

3. In which arrangement are the appliances connected in the electric circuit of our homes, Series or Parallel? Give one reason for your answer.

Ans: **Parallel circuit:** When the circuit is in parallel, the appliances work independently. This is the reason that in our household wiring system, all the circuits are in parallel. Every appliance when put on, works on its own without the interruption of the other appliance.

4. Select conductors and insulators from the following:

Glass, silver, copper, wood, paper, pure water, impure water, aluminium, iron, leather, plastic, steel, human body and ebonite.

Ans:

Conductors — Silver, copper, impure water, aluminium, iron, steel, human body.

Insulators — Glass, wood, paper, pure water, leather, plastic and ebonite.

5. Distinguish between conductors and insulators of electricity. Give two examples of each.

Ans:

Conductors

Conductors are those substances which allow electricity to flow through them.

e.g. all metals, human body.

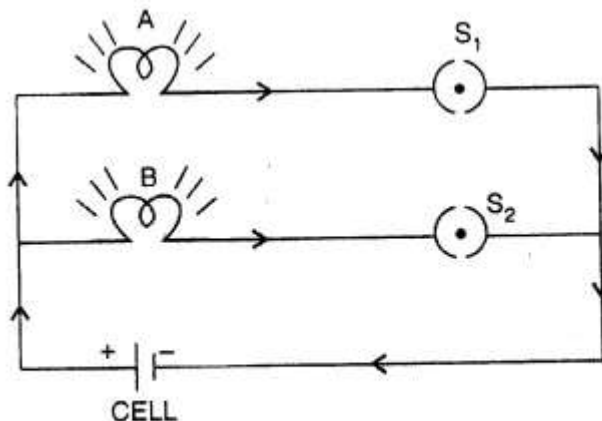
Insulators

Insulators are those which do not allow electricity to pass through them. –

e.g. wood, paper, glass.

6. You are provided with a torch bulb, a cell and two plastic coated metal wires. Draw a diagram to show a complete circuit to light the bulb.

Ans: Take two bulbs A and B. Connect them through switches S_1 and S_2 in parallel as shown in fig. Close both the switches. You will see that both the bulbs glow.



Circuit is complete, both bulbs glow

7. Name four appliances which work using electricity.

Ans:

- i. an electric iron
- ii. an electric heater
- iii. an electric kettle
- iv. an immersion rod

8. State two common uses of electromagnets.

Ans: In electrical appliances such as electric bell, fan etc.

- i. In lifting heavy loads of iron scrap.
- ii. To remove tiny particles of iron from the wound.
- iii. In loading furnaces with iron.
- iv. In separation of magnetic substances from the non-magnetic substances.

9. State two ways by which the strength of magnetic field of an electromagnet can be increased.

Ans:

- i. By inserting a rod of soft iron or steel inside the cylindrical tube. This rod is called the core.
- ii. By increasing the total number of turns of the coil.

10. What is an electromagnet?

Ans: **An electromagnet** — An electromagnet is a temporary magnet which behaves as a magnet when electric current is passed through the insulated copper wire and loses its magnetism when current is stopped. It has a soft iron piece called the core with an insulated copper wire wound on it.

