(SNBP INTERNATIONAL SCHOOL, CHIKHALI) (2024-25)

Term 2 NOTES

NAME: _____ DATE : _____

CLASS: VII DIVISION: _____ SUBJECT: Science

PREPARED BY: Mrs. Swati More LESSON: 14 Electric current and its effects

---

KEY WORDS:

1.terminal

2.electric bell

3.electromagnet

4.fuse

5.Magnetic effect

Pre activity: Draw symbols of electric components.

1..

Q1. The bulb in the circuit shown in Fig.14.23 does not glow. Can you identify the problem? Make necessary changes in the circuit to make the bulb glow.

Ans:The positive terminal (+) of one cell always be connected to negative terminal (-) of another cell. Here the two positive terminals are connected to each other.

Q2. Name any two effects of electric current.

Ans: Heating Effect of current: When an electric current passes through a wire, the wire gets heated. This is known as the heating effect of current. Which is used in many heating applications like electric heater, electric ion, light bulb etc.
Magnetic Effect of current: When an electric current flows through a wire, it generates magnetic field around it. This effect is called magnetic effect of current. Magnetic Effect of electric current has many applications like power lift, electric bell, electric fan etc.

Q3. When the current is switched on through a wire, a compass needle kept nearby gets deflected from its north-south position. Explain.

Ans: The current carrying wire produces magnetic field around it. When a compass is kept nearby this wire, the two magnetic fields (magnetic field due to wire and magnetic field due to compass) interact each other causing deflection in magnetic needle. When the current is switched off, there is no magnetic field produced by the wire, magnetic needle does not deflect from its north-south position.

Q4. Will the compass needle show deflection when the switch in the circuit shown by Fig.14.24 is closed?

Ans: No, the compass needle will not show deflection even though the switch is closed, because there is no source of electric current (Battery or cell). An electric cell or battery needs to be connected here. In the absence of electric current, there is no magnetic field produced by the wires. Hence there is no deflection.

Q5. Do you think an electromagnet can be used for separating plastic bags from a garbage heap? Explain.

Ans: An electromagnet is just like as a bar magnet and it can attract iron pieces only. Plastic does not have any magnetic property, so electromagnet cannot be used to separate plastic bags from garbage heap.

Q7. Zubeda made an electric circuit using a cell holder, a switch and a bulb. When she put the switch in the 'ON' position, the bulb did not glow. Help Zubeda in identifying the possible defects in the circuit.

Ans: ***Possible reasons are as follows:***

1. The bulb may be fused or defective.
2. Cells are not connected properly.
3. There may be loose connections.
4. The switch is not functioning well
5. The cells are dried up i.e. the power of the cell has been exhausted.

Q8. What is short- circuit?

Ans: A sudden flow of very large current due to direct contact of a live and a neutral wire is called short- circuit. Short circuit is caused due to defective or damaged wiring.

LONG ANSWER QUESTIONS:

Q1. 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.

Ans: Fuse is a device that is a safeguard to all of our electrical appliances. They are made up of special material which melt quickly and break when a large electric currents passed through it. If the electrician does not use proper fuse wire, instead he uses any ordinary electric wire as fuse, it increases the risk of overheating of wires due to flow of excessive current. It may lead to short circuit in electric equipment and these appliances may catch fire. It is advised to use standard fuse wire or MCBs to prevent electrical accidents.

Q2. What is an electromagnet? Draw a diagram with an electromagnet connected in a circuit. How will you make an electromagnet?

Ans: An electromagnet is a magnet consisting of a coil of insulated copper wire wound around a soft iron rod that is magnetized only when an electric current is passed through it.
Construction of an electromagnet:

1. To make an electromagnet- wind the insulated copper wire around the iron nail so that it forms a coil.
2. Connect the free ends of the coil of wire to the two terminals of an electric cell through a switch.
3. Now, place some steel pins near one of the ends of the iron nail.
4. Switch ON the current.
5. We find that steel pins cling to the tip of the nail. It has become an electromagnet now.

Post activity:
Draw a neat circuit diagram of electric circuit.

Subject Teacher HOD Co-ordinator Principal