

1. What happens when current flows through a wire?
- A. It glows
B. It becomes cold
C. It produces a magnetic field
D. It breaks (C)

Explanation : When electric current flows through a wire, it produces a magnetic field around it, known as the magnetic effect of electric current.

2. Which component is necessary to make an electromagnet stronger?
- A. Plastic rod
B. Wooden stick
C. Iron nail
D. Copper sheet (C)

Explanation : Inserting an iron nail as a core in the coil increases the strength of the electromagnet.

3. What causes the heating effect in a wire when current passes through it?
- A. Gravity
B. Magnetic force
C. Resistance of the wire
D. Air pressure (C)

Explanation : The resistance in the wire converts part of electrical energy into heat, causing the wire to warm up.

4. Which scientist discovered that electric current produces a magnetic field?
- A. Galileo
B. Newton
C. Hans Christian Oersted
D. Volta (C)

Explanation : Oersted discovered in 1820 that a current-carrying wire deflects a magnetic compass needle.

5. What is the electrolyte in a lemon cell experiment?
- A. Water
B. Salt
C. Lemon juice
D. Alcohol (C)

Explanation : The lemon juice acts as the electrolyte that helps in conducting electricity between the electrodes.

6. Which of the following is a single-use electric cell?
- A. Lead-acid battery
B. Dry cell
C. Lithium-ion battery
D. Nickel-cadmium battery (B)

Explanation : Dry cells are used once and then disposed of. They are not rechargeable.

7. What happens if you reverse the direction of current in an electromagnet?
- A. Nothing changes
B. The strength doubles
C. The poles reverse
D. The magnet stops working (C)

Explanation : Reversing the direction of current reverses the north and south poles of the electromagnet.

8. What is the main reason dry cells are called "dry"?
- A. They contain dry metal rods
B. They are reusable
C. The electrolyte is a moist paste
D. They never expire (C)

Explanation : Dry cells use a thick moist paste as an electrolyte instead of liquid.

9. Which wire heats up more when current flows — copper or nichrome (same size)?
- A. Copper
B. Nichrome
C. Both equally
D. Neither (B)

Explanation : Nichrome offers more resistance than copper, so it heats up more for the same current.

10. What is the main function of rechargeable batteries?
- A. They are cheap
B. They produce more heat
C. They can be reused multiple times
D. They don't need an electrolyte (C)

Explanation : Rechargeable batteries can be recharged and used again, making them cost-effective and environmentally friendly.