Chapter - 4 | Electricity: Magnetic and Heating Effects

QUIZ-01

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.