

- 1. Which terminal of a dry cell is represented by the zinc container?**
 - a) Positive terminal**
 - b) Negative terminal**
 - c) Neutral terminal**
 - d) Both positive and negative**

- 2. During a short circuit, a dry cell may become warm because:**
 - A. a large current can flow through the very low-resistance path**
 - B. no current flows**
 - C. chemical energy disappears instantly**
 - D. the carbon rod absorbs heat from the surroundings**

- 3. In a working dry cell, the chemical reaction is important because it:**
 - A. produces charges that can flow through an external circuit**
 - B. produces only heat**
 - C. prevents electrons from moving**
 - D. converts electrical energy into chemical energy**

- 4. An electromagnet is preferred over a permanent magnet in an electric bell mainly because:**
 - A. it is always stronger**
 - B. its magnetism can be controlled by switching current on and off**
 - C. it does not require a coil**
 - D. it works without electricity**

- 5. In an electrolytic cell, the electrode connected to the positive terminal of the battery is called the:**
 - A. cathode**
 - B. anode**
 - C. electrolyte**
 - D. terminal**

- 6. A student accidentally interchanges the connections of the electrodes in an electrolytic setup. What is most likely to change?**
 - A. The direction of movement of ions relative to the electrodes**
 - B. The existence of matter**

- C. The mass of the battery**
- D. The temperature of the surroundings only**

7. Why does diffusion not normally require continuous stirring?

- A. Particles possess continuous random motion**
- B. Particles remain fixed in position**
- C. Gravity mixes all particles**
- D. Particles are attracted only upwards**

8. A student places a crystal of potassium permanganate at the bottom of a beaker containing water. The purple colour slowly spreads upward without stirring. Which explanation is most complete?

- A. Water moves upward because of gravity.**
- B. KMnO_4 changes into water.**
- C. Both water and KMnO_4 particles are in continuous motion, causing mixing.**
- D. The crystal produces a force that pushes the colour upward.**

9. A gas is compressed into half its original volume while its temperature remains unchanged. Which statement is correct?

- A. The particles become half their original size.**
- B. The average distance between particles decreases.**
- C. The particles stop moving.**
- D. The particles disappear from the container.**

10. Which option correctly connects particle arrangement → particle movement → diffusion rate?

- A. Solid: close → highly free → fastest**
- B. Liquid: moderately close → moderately free → intermediate**
- C. Gas: very close → restricted → slowest**
- D. Solid: widely separated → highly free → fastest**

11. A student draws magnetic field lines around a bar magnet with equal spacing everywhere. What is the main limitation of this diagram?

- A. It suggests that the magnetic field has the same strength everywhere.**
- B. It proves that the magnet has no poles.**

- C. It proves that field lines are real objects.**
- D. It shows that the magnet has no magnetic field.**

12. Which statement best describes the complete pattern of magnetic field lines around a bar magnet?

- A. They begin at North and end at South.**
- B. They form closed curves, with the conventional direction outside the magnet from North to South.**
- C. They exist only outside the magnet.**
- D. They exist only between the two poles.**

13. Assertion (A): The zinc container of an ordinary dry cell acts as one of its electrodes.

Reason (R): Zinc participates in the chemical reactions that help produce electrical energy.

14. Assertion (A): The electrolyte in a dry cell is in the form of a moist paste rather than a freely flowing liquid.

Reason (R): The paste-like form makes the cell relatively convenient and portable.

15. Assertion (A): Evaporation can occur below the boiling point of a liquid.

Reason (R): Some particles at the surface possess enough kinetic energy to escape from the liquid.

16. Assertion (A): If there is no current through a coil, it cannot produce any magnetic effect under any circumstances.

Reason (R): A coil can have a magnetic effect only when electric current flows through it.

17. Assertion (A): A dry cell and an electromagnet are both associated with energy conversion.

Reason (R): A dry cell converts chemical energy into electrical energy, while an electromagnet uses electrical energy to produce a magnetic effect.

18. Write name of the process responsible for cooling during sweating.

19. Mention the name of change of state requires absorption of heat.

20. Write the name of conducting medium inside a dry cell.

