

Lecture Notes: Introduction to Electric Charges and Common Observations of Electric Discharge

Multiple Choice Questions (MCQs) on Introduction to Electric Charges

1. What are the two types of electric charges?

- A) Positive and neutral
- B) Negative and neutral
- C) Positive and negative
- D) Conductive and non-conductive

2. What is the phenomenon of sudden release of accumulated charge called?

- A) Conduction
- B) Induction
- C) Electric discharge
- D) Magnetic induction

3. Which of the following is an example of electric discharge?

- A) Water boiling
- B) Lightning during a thunderstorm
- C) Melting of ice
- D) Evaporation of alcohol

4. Why do synthetic clothes sometimes produce sparks when removed?

- A) Due to high temperature
- B) Due to accumulation of static charge
- C) Due to magnetism
- D) Due to chemical reactions

5. When you rub a plastic comb on dry hair, why does it attract small pieces of paper?

- A) The comb becomes hot
- B) The comb gets magnetized
- C) The comb gains static charge
- D) The comb absorbs moisture

6. What branch of physics deals with the study of electric charges at rest?

- A) Electromagnetism
- B) Electrostatics
- C) Electronics
- D) Thermodynamics

7. What happens when a charged body touches a neutral conductor?

- A) The conductor repels all charges
- B) The conductor acquires charge from the body
- C) The conductor remains neutral
- D) The conductor loses mass

8. Which of the following statements about electric charges is correct?

- A) Like charges attract each other
- B) Unlike charges repel each other
- C) Like charges repel, and unlike charges attract
- D) Electric charges do not interact

9. What causes electric shock when touching a car door after driving?

- A) A sudden temperature change
- B) Electric discharge due to static charge accumulation
- C) A chemical reaction on the metal surface
- D) Air pressure difference

10. Why does lightning occur during a thunderstorm?

- A) Due to heating of the atmosphere
- B) Due to charge buildup and sudden discharge in the clouds
- C) Due to high-speed winds
- D) Due to gravitational pull of the Earth

11. What happens when a negatively charged object is brought close to a neutral object?

- A) The neutral object gains negative charge
- B) The neutral object remains unchanged
- C) The neutral object gets repelled
- D) The neutral object gets polarized

12. Who first observed the attraction of light objects by rubbed amber?

- A) Isaac Newton
- B) Benjamin Franklin
- C) Thales of Miletus
- D) Michael Faraday

13. Which of the following materials is more likely to accumulate static charge?

- A) Copper
- B) Plastic
- C) Iron
- D) Silver

14. In which of the following situations is electrostatics involved?

- A) Lightning
- B) Gravitational pull of the moon
- C) Flow of current in a wire
- D) Boiling of water

15. What is the charge on an electron?

- A) $+1.6 \times 10^{-19}$ C
 - B) -1.6×10^{-19} C
 - C) 0 C (Neutral)
 - D) $+9.1 \times 10^{-31}$ C
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