Instructions

Complete the following questions related to electricity, including current, resistance, voltage, and their relationships. Use the space provided to write your answers. For the mathematical problems, show your workings.

Section 1: Theoretical Questions

1. Define current, voltage, and resistance in your own words.

2. Explain Ohm's Law and give the formula associated with it.

Section 2: Conceptual Questions

3. What happens to current in a circuit if the resistance increases while the voltage remains constant? Explain your reasoning.

4. What is the role of a resistor in an electrical circuit? Provide a practical example.

Section 3: Mathematical Problems

5. Calculate the current flowing through a circuit with a voltage of 12V and a resistance of 4Ω.

6. If a circuit contains a resistor of 10Ω and a current of 2A is flowing through it, what is the voltage across the resistor?

Section 4: IV Graphs

7. Draw an IV (Current-Voltage) graph for a conductor that follows Ohm's Law. Label the axes and explain the relationship shown in your graph.

Section 5: Charged Particles

8. What is electric charge? Discuss its role in the flow of electricity within a circuit.

Answers

1. Current:

Voltage:

Resistance:

2. Ohm's Law:

3. Current behavior:

4. Resistor role:

5. Current calculation (12V, 4Ω):

6. Voltage calculation (10Ω, 2A):

7. IV graph explanation:

8. Electric charge role: