

Practice and Revision - Current Electricity

Chapter 3: Current Electricity · Topic 2

Key Concept

Ohm's law states current is directly proportional to voltage at constant temperature: $V=IR$, where V is voltage, I is current, R is resistance.

In a series circuit, current remains the same throughout, while voltage divides across components, and resistances add directly.

In a parallel circuit, voltage remains the same across each branch, while current divides, and resistances combine using reciprocals.

Electrical power, calculated as $P=VI$, indicates the rate of energy consumption, important for understanding appliance energy usage.

Quick Revision Notes

- Ohm's law: $V=IR$ (constant temperature).
- V =voltage, I =current, R =resistance.
- Series circuit: same current, voltage divides.
- Resistances add directly in series.
- Parallel circuit: same voltage, current divides.
- Resistances combine via reciprocals in parallel.
- Power: $P=VI$, rate of energy use.
- This matters for appliance energy usage.

Practice Questions

- 1 Calculate current using Ohm's law given $V=10\text{V}$, $R=5\Omega$.
- 2 Discuss the difference between series and parallel circuits.
- 3 Calculate power given $V=12\text{V}$, $I=3\text{A}$.
- 4 Draw a simple series circuit diagram.
- 5 Draw a simple parallel circuit diagram.
- 6 Explain Ohm's law in your own words.