

Definitions and Concepts for CAIE Physics A-level

Topic 9: Electricity

Charge: A property of matter that causes it to experience force when placed in an electromagnetic field. It can be positive or negative.

Current: The rate of flow of charge in a circuit.

Light-Dependent Resistor (LDR): A light sensitive semiconductor whose resistance increases when light intensity decreases.

Ohmic Conductor: A conductor following Ohm's law where current flowing through it is directly proportional to the potential difference between each end of the conductor. This only holds if the conductor is kept at a constant temperature.

Potential Difference: The difference in electrical potential between two points in a circuit. It is also the work done per coulomb to move a charge from the lower potential point to the higher potential point. It is measured in Volts.

Power: The rate of energy transfer in a circuit. It can be calculated as the product of the current and the potential difference between two points. It is measured in Watts.

Resistance: A measure of how difficult it is for current to flow through a material.

Resistivity: A measure of how difficult it is for charge to travel through a material. It is proportional to the object's resistance and cross-sectional area, and inversely proportional to the object's length. It is measured in Ohm metres.

Quantisation of Charge: The idea that charge can only exist in discrete packets of multiples of the elementary charge.

Thermistor: A temperature sensitive semiconductor whose resistance increases when temperature decreases.

Volt: The unit of potential difference.

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