Electricity

Term	Definition
Electric Current	The flow of electric charge in a conductor.
Drift Velocity	The average velocity of electrons moving through a conductor under the influence of an electric field.
Resistivity	A material property that quantifies how strongly a material opposes the flow of electric current.
Ohm's Law	States that the current through a conductor is directly proportional to the voltage across it (V = IR).
Conductance	The reciprocal of resistance, indicating how easily a material allows the flow of electric current.
EMF (Electromotive Force)	The energy provided by a cell or battery per coulomb of charge passing through it.
Internal Resistance	The resistance within a battery or cell that causes a voltage drop when current flows.
Kirchhoff's Current Law (KCL)	At any junction in a circuit, the sum of currents entering the junction equals the sum of currents leaving it.
Kirchhoff's Voltage Law (KVL)	The sum of all the voltages around a closed loop in a circuit is equal to zero.
Series Combination	A circuit configuration where components are connected end-to-end, so the same current flows through each.
Parallel Combination	A circuit configuration where components are connected across the same two points, sharing the same voltage.
Power Dissipation	The conversion of electrical energy into heat energy in a resistive component.
Current Density	The amount of electric current flowing per unit area of a cross-section.
Mobility	The drift velocity of charge carriers per unit electric field.
Relaxation Time	The average time between two successive collisions of electrons in a conductor.