SANGHARSH BATCH

AI ROBOTICS- BASIC CONCEPTS AND SIMPLE CIRCUITS

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INTRODUCTION

Electronics is all around us! From toys to televisions, everything works using circuits. A circuit is like a road where electricity flows.

Electricity is the flow of electric current that powers devices like bulbs, fans, and TVs. It travels through wires and is produced from sources like batteries and power stations.

An atom is the smallest unit of matter that makes up everything around us. It consists of a nucleus (containing protons and neutrons) and electrons that orbit around it. Atoms combine to form molecules, creating objects, air, water, and even living beings!

a. Electrons are tiniest particle in the world which is negatively charged.

b. Electrons are placed in outer shell of an atom. Atom consist of a.Protons (positively charge) b. Electrons (negatively charge) c. Neutron (no charge)

Electricity flows through wires like water flows through a pipe. Ohm's Law explains the relationship between voltage (V), current (I), and resistance (R) in a circuit. It states that when voltage increases, current also Increases, but if resistance increases, current decreases.

Current (I): The flow of electric charge in a circuit, measured in amperes (A).

Voltage (V): The potential difference between two points in a circuit, measured in volts (V). Resistance (R): The opposition to the flow of current in a circuit, measured in ohms (Ω).Ohms Law-V | Therefore, V=IR, R is Resistance

A circuit is a complete path where electricity flows. It has two main parts: 1. Source - The power provider, like a battery or plug.2. Load-The device that uses electricity, like a bulb, fan, or motor.