

# Definitions and Concepts for CAIE Computer Science IGCSE

## Topic 10: Boolean logic

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**Logic Gate:** A device that applies logical operations to one or more Boolean inputs to produce a single output.

**Logic Circuit:** A set of logic gates that are connected to carry out more complex actions.

**NOT Gate:** A logic gate that inverts the input; if the input is true, the output is false, and vice versa.

**AND Gate:** A logic gate that outputs true only if both its inputs are true.

**OR Gate:** A logic gate that outputs true if at least one of its inputs is true.

**NAND Gate:** A logic gate that outputs true as long as at least one of its inputs isn't true.

**NOR Gate:** A logic gate that outputs true if neither of its inputs are true, but false otherwise.

**XOR (EOR) Gate:** A logic gate that outputs true if exactly one of its inputs is true, but false otherwise.

**Truth Table:** A table showing all possible input combinations for a logic gate or circuit and the corresponding output.

**Logic Circuit Diagram:** A visual representation using standard symbols for logic gates and their connections to show how a circuit performs a logical function.

**Logic Expression:** An expression that represents the logic of a circuit or condition using Boolean operators (AND, OR, NOT, XOR).

