

1 EXPT NO. 1:

1.1 STUDY OF LOGIC GATES

Objective:

To study about the logic gates and verify their truth tables.

Equipments:

Logic Circuit Simulator Pro.

Theory:

Circuit that takes the logical decision and the process are called *logic gates*. Each gate has one or more input and only one output. OR, AND and NOT are basic gates. NAND, NOR and X-OR are known as universal gates. Basic gates form these gates.

AND GATES:

The AND gates performs a logical multiplication commonly known as AND function. The output is high when both inputs are high. The output is low level when any one of the input is low.

OR GATES:

The OR gate performs a logical addition commonly known as OR function. The output is high when any one of the input is high. The output is low level when both inputs are low.

NOT GATES:

The NOT gate is called inverter. The output is high when input is low. The output is low when input is high.

NAND GATES

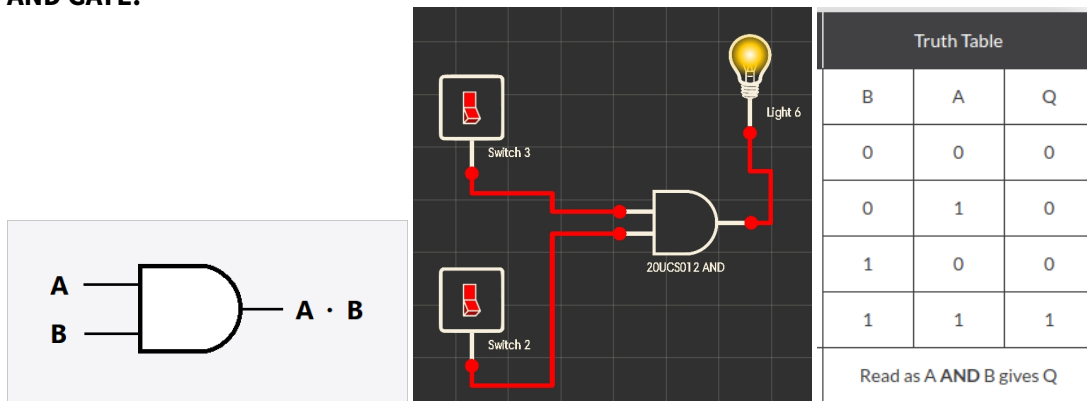
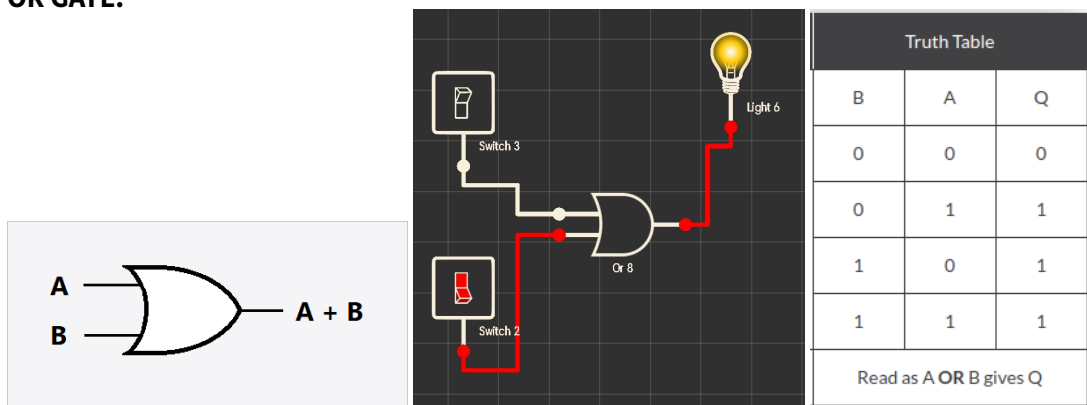
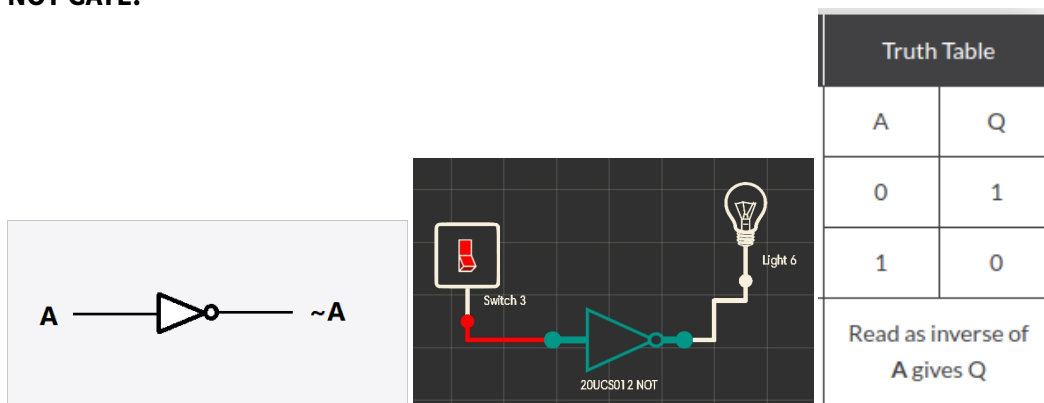
The NAND gate is a contraction of AND-NOT. The output is high when both inputs are low and any one of the input is high. The output is low when both inputs are high.

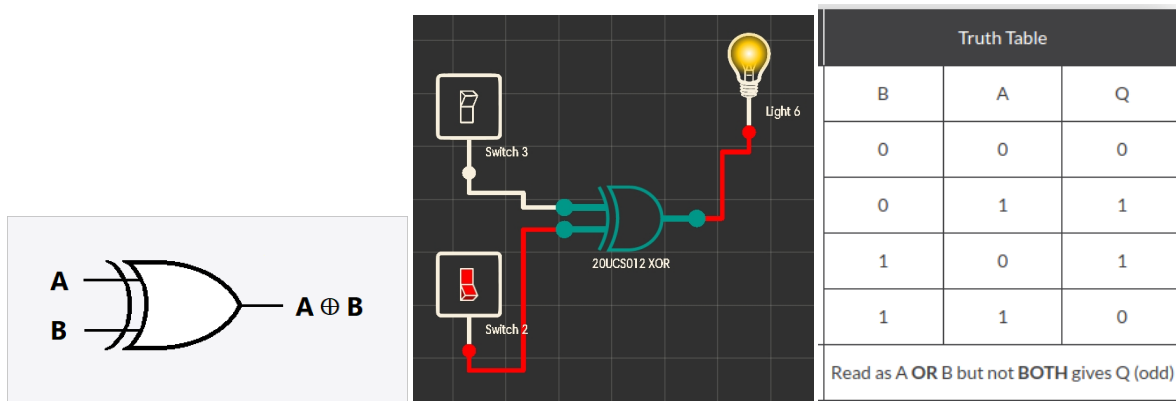
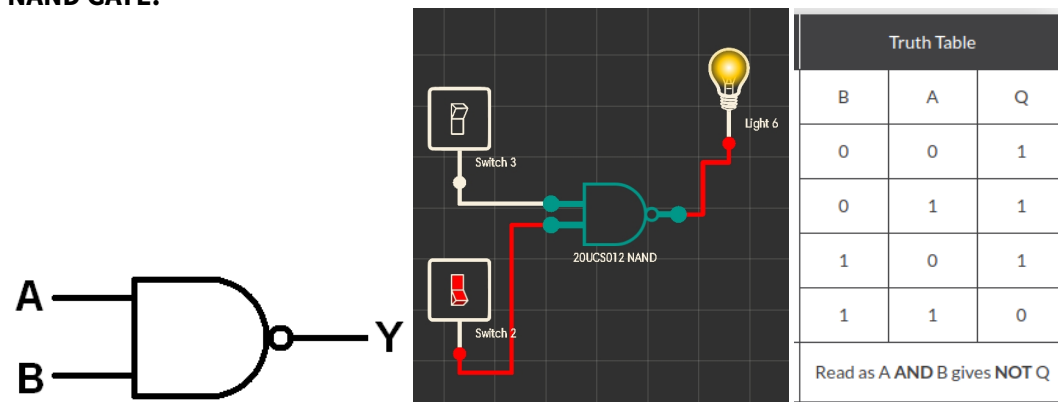
NOR GATES

The NOR gate is a contraction of OR-NOT. The output is high when both inputs are low. The output is low when any one or both inputs are high.

XOR GATES

The output is high when any one of the input is high. The output is low when both inputs are low or high.

AND GATE:**OR GATE:****NOT GATE:****XOR GATE:**

**NAND GATE:****NOR GATE:**