

Practical-2

Aim:

To verify the truth table of Ex-OR & Ex-NOR gates by AOI logic.

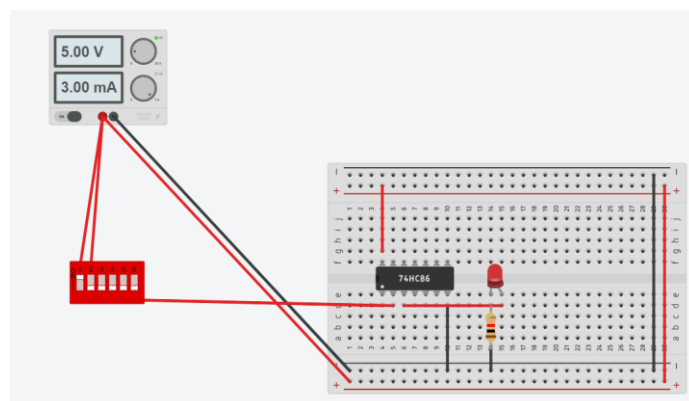
Apparatus:

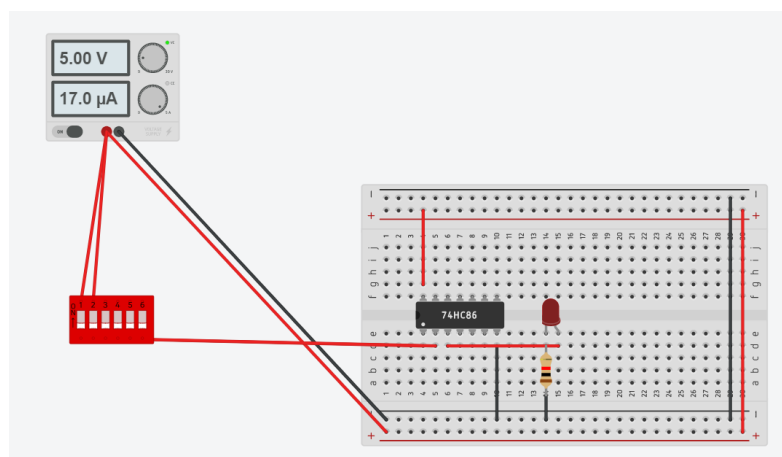
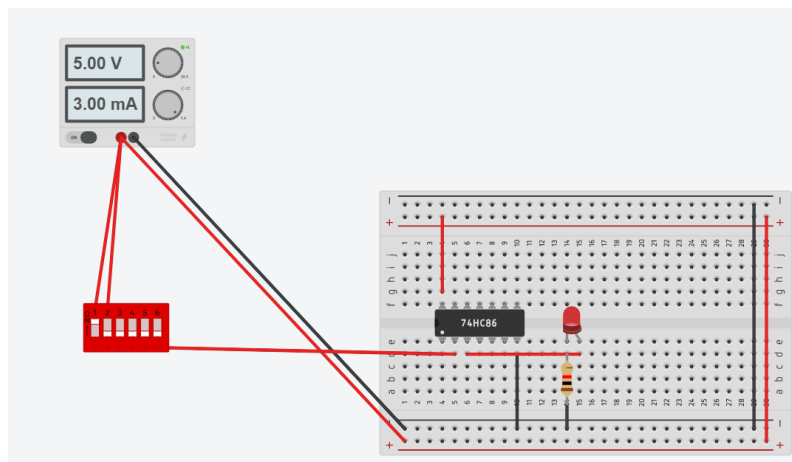
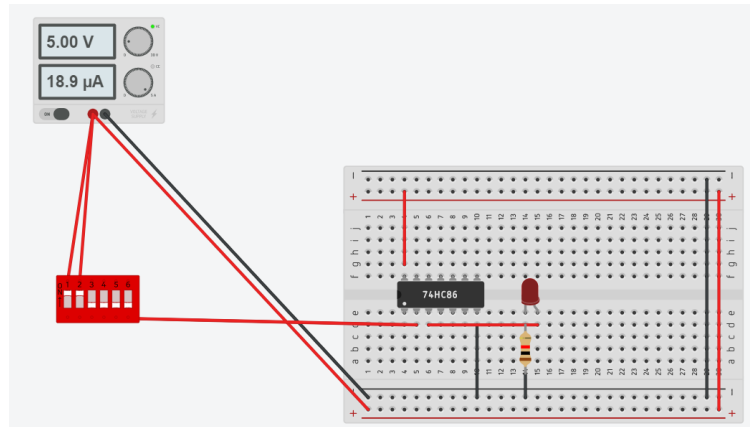
connection wires, power supply, power project board, LED, ICs

Theory:

The Ex-OR gate is a two input, one output logic circuit whose output assumes a logic 1 state when one and only one of its two inputs assumes a logic 1 state. Under the conditions when both the inputs assume the logic 0 state, or when both the inputs assume the logic 1 state, the output assumes a logic 0 state. Since an Ex-OR gate produces an output 1 only when the inputs are not equal, it is called an anti-coincidence gate or inequality detector.

2 Input XOR gate using AOI logic:





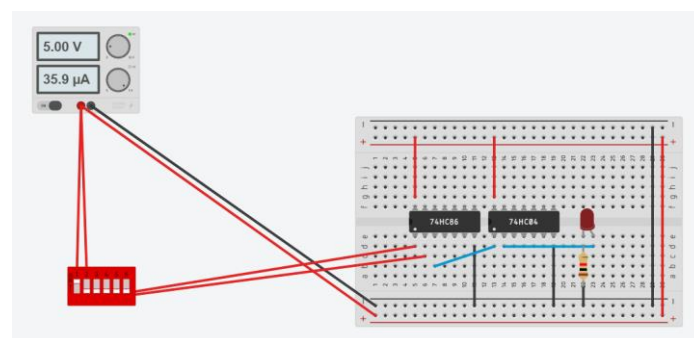
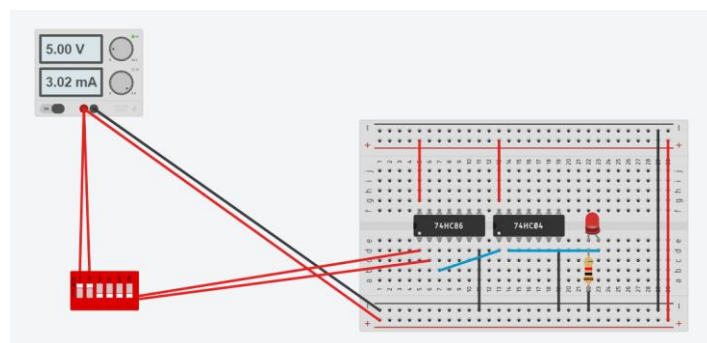
Observation Table:

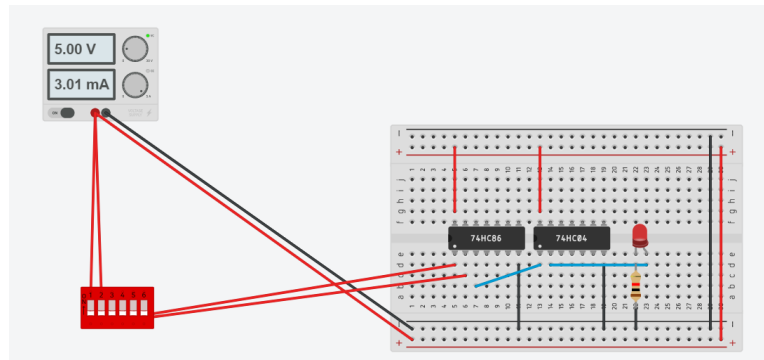
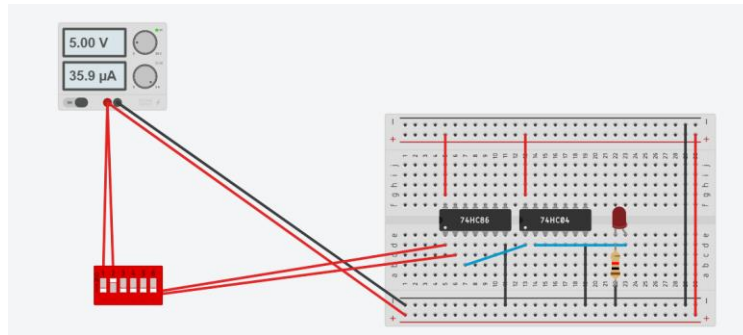
INPUT	INPUT	OUTPUT
0	0	0
0	1	1
1	0	1
1	1	0

The Ex-NOR gate is a two input, one output logic circuit whose output assumes a logic 0 state or when both the inputs assumes a logic 1 state. The output assumes a logic 0 state, when one of the inputs assumes a 0 state and the other a 1 state. It is also known as a coincidence gate or equality detector.

$$A \odot B = AB + A'B'$$

2 Input Ex-NOR gate using AOI logic:





Observation Table:

INPUT	INPUT	OUTPUT
0	0	1
0	1	0
1	0	0
1	1	1

Procedure:

- 1) Connect the circuit according to circuit diagram.
- 2) Apply different input combination at the input pin of ICs.
- 3) Verify the truth table of Ex-OR and Ex-NOR gate for different input combinations.

CONCLUSION:

By performing the above practical, we verified the working of ex-OR and ex-NOR