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| Experiment No. 1 |
| Truth table of various logic gates using ICs. |
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**Aim -** To verify the truth table of various logic gates using ICs.

**Objective -**

* Understand how to use the breadboard to patch up, test your logic design and debug it.
* The principal objective of this experiment is to fully understand the function and use of logic gates.
* Understand how to implement simple circuits based on a schematic diagram using logic gates.

**Components required -**

1. IC’s 7408, 7432, 7404

2. Bread Board.

3. Connecting wires.

**Theory -**

In digital electronics, a gate is logic circuits with one output and one or more inputs. Logic gates are available as integrated circuits.

**AND gate** :

AND gate performs logical multiplication, more commonly known as AND operation. The AND gate output will be in high state only when all the inputs are in high state.7408 is a Quad 2 input AND gate.

**OR gate:**

It performs logical addition. Its output become high if any of the inputs is in logic high. 7432 is a Quad 2 input OR gate.

**NOT gate:**

It performs basic logic function for inversion or complementation. The purpose of the inverter is to change one logic level to the opposite level. IC 7404 is a Hex inverter.

**Circuit Diagram, Truth Table -**

**AND Gate -**



**OR Gate -**



**NOT Gate -**



**Procedure:**

1.Test all the components in the Ic packages using a digital IC tester. Also assure whether all the connecting wires are in good condition by testing for the continuity using a Multimeter or a trainer kit.

2.Verify the dual in line package (DIP) inout of the IC before feeding the inputs.

3.Set up the circuits and observe the outputs.

**Output:-**



**Conclusion -**

I have learned some basic gates like “and” “or” “nand” “nor” “not” “xor” “xnor”.Hence the above experiment is verified and performed.