Experiment No. 1:-
Truth table of various logic gates using ICs.
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Date of Performance:
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Aim - To verify the truth table of various logic gates using ICs.

Objective

l. Understand how to use the breadboard to patch up, test your logic design and debug

2. The principal objective of this experiment is to fully understand the function and use of logic gates.
3. Understand how to implement simple circuits based on a schematic diagram uslng logic gates.

Components required - 1.
IC's 7408, 7432, 7404

2. Bread Board.

3. Connecting wires.

Theory

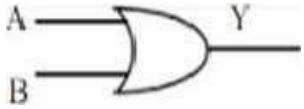
In digital electronics, a gate is logic circuits with one output and one or more inputs. Logic gates are available as integrated circuits. AND gate •

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 -



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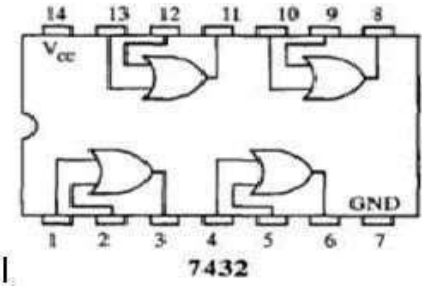

NOT Gate -

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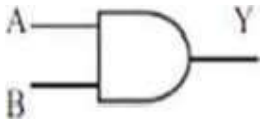
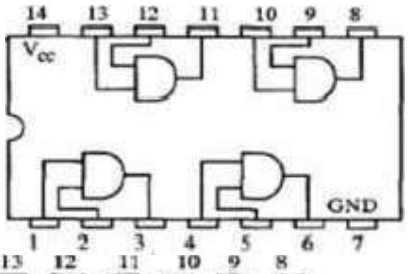
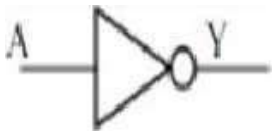


7408

OR Gate -





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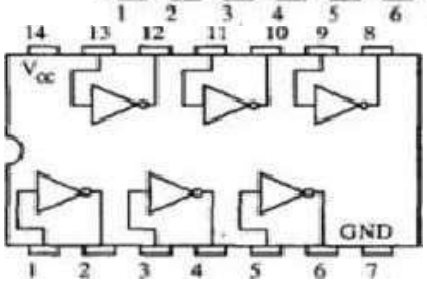
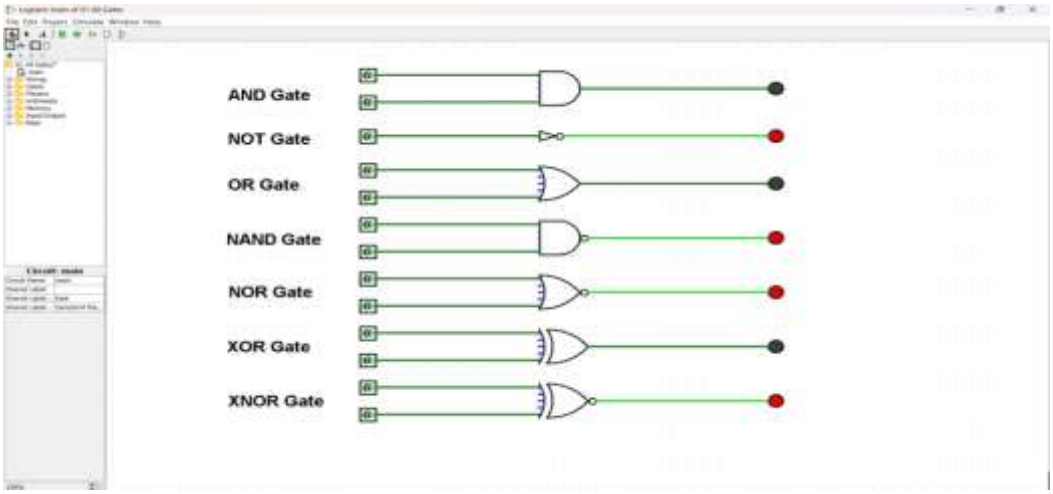


7404

Screenshort;-



Procedure: l. 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) in out of the IC before feeding the inputs.

3.Set up the circuits and observe the outputs.

Conclusion- Through this experiment ,we aimed to showcase how these logic gates process binary input signals to produce specific output states, as outlined in their respective truth tables, by utilizing the logical behavior and functionality of the different types of gates, including AND,OR,NOT,NAND,NOR, and XOR gates.

This hands-on approach provided a practical understanding of fundamental digital logic principles and reinforced the relationship between logical operation and the resulting output, essentials for the further study and application in the field of digital electronics.