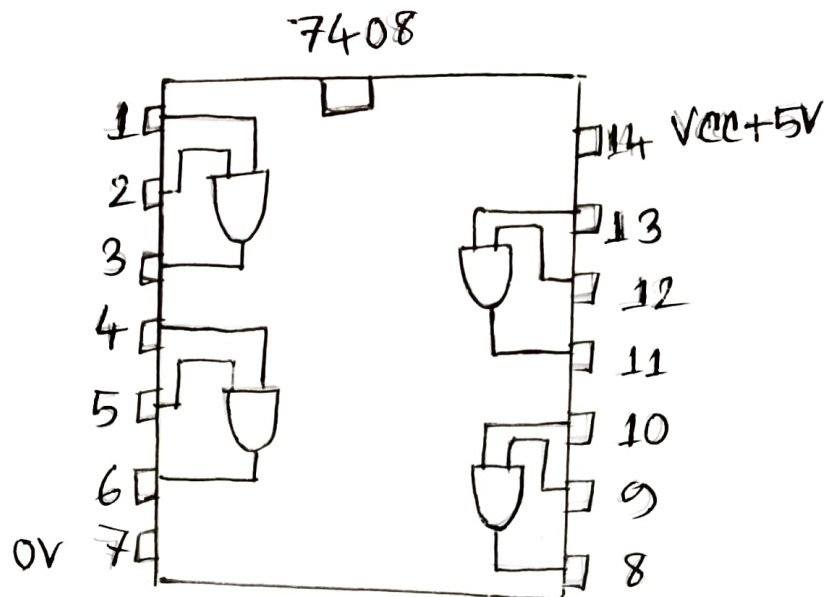# Objective :

- To get familiarized with fundamental logic gates and demonstrate the input output relationship of 2-input AND (IC - 7408), OR (IC - 7432) and NOT (IC - 7404) gates by constructing their truth tables.

- To get familiarized with other logic gates like NAND (IC - 7400), NOR (IC - 7402) XOR (IC - 7486) and XNOR (IC - 74266)
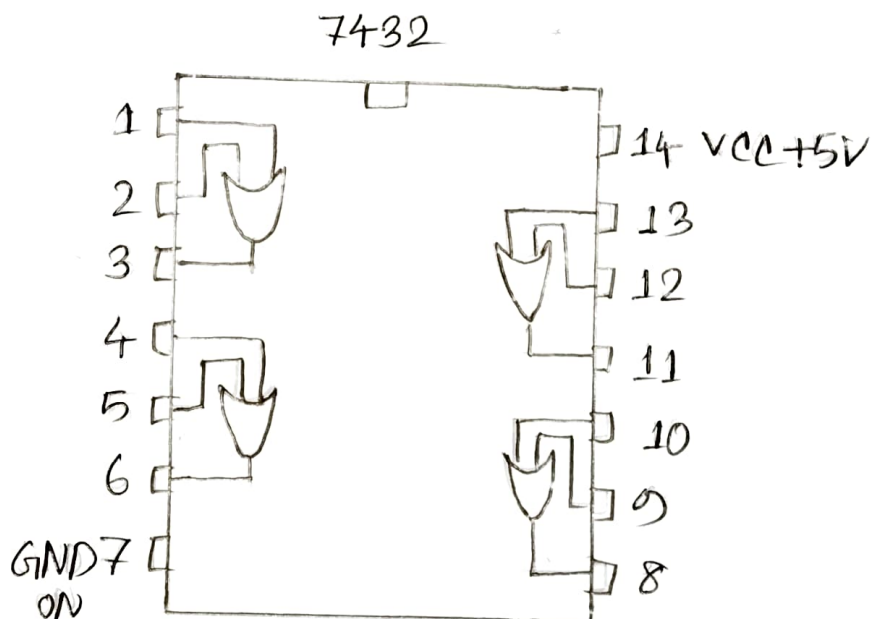
Required Components and Equipment :

- Breadboard
- Connecting wires
- IC 7400, IC 7408, IC - 7432, ~~IC - 7406~~, IC 7404, IC 7402, IC - 7486, IC - 74266

Experimental Setup:

7408

Pin layout of 7408
figure: AND gate.

7432

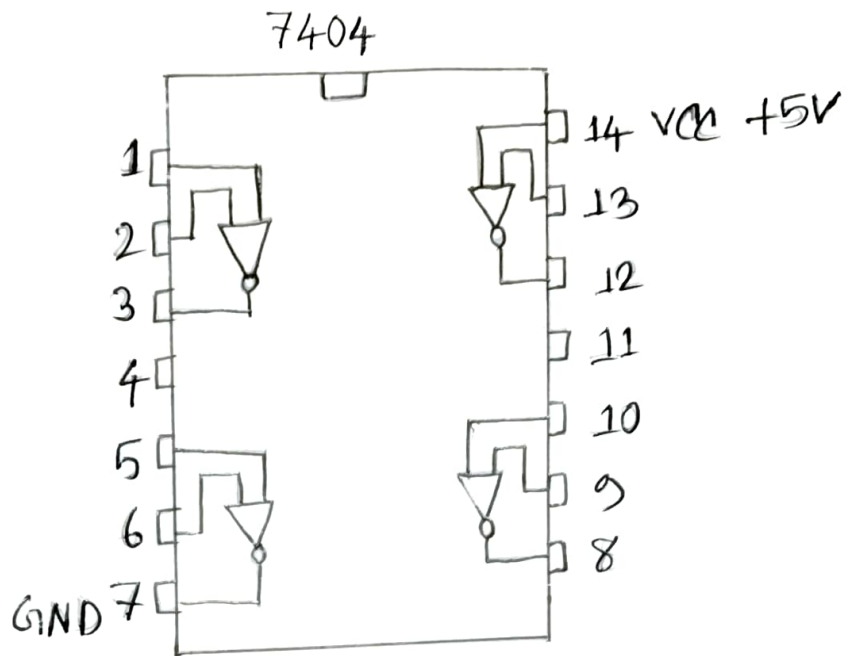

Pin layout of 7432
figure: OR gate.

7404

1	14 VCC +5V
2	13
3	12
4	11
5	10
6	9
GND 7	8

Pin layout of 7404

figure : NOT Gate

7400

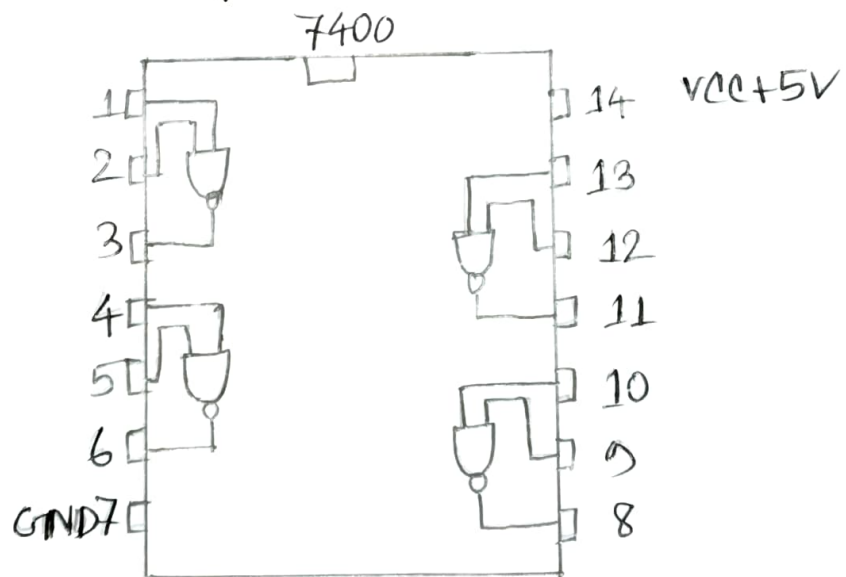|	
1	14 VCC+5V
2	13
3	12
4	11
5	10
6	9
GND 7	8

Pin layout of 7400

figure : NAND Gate.
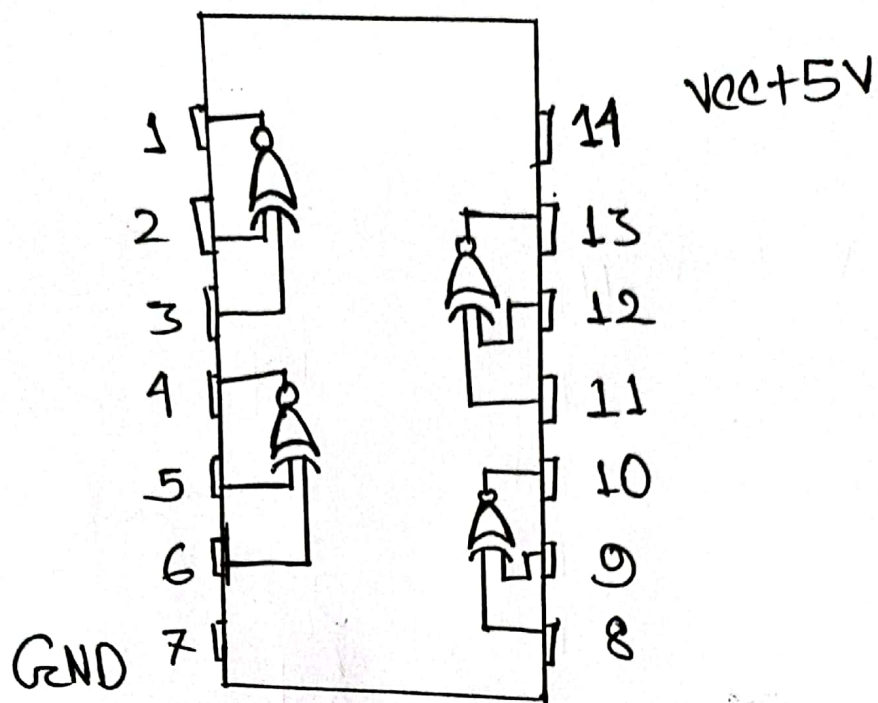
fig: NOR gate; Pin Layout of 7402
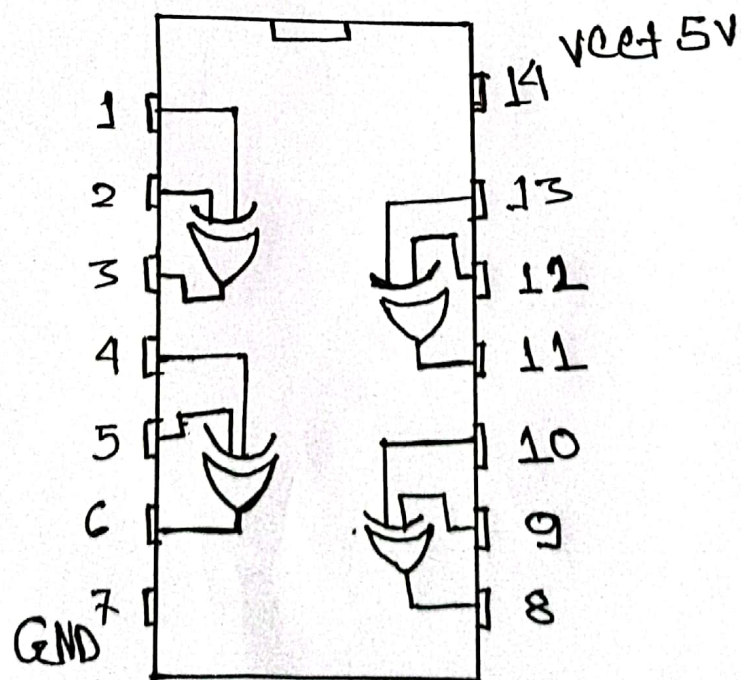
fig: XOR gate, pin layout of 7486.
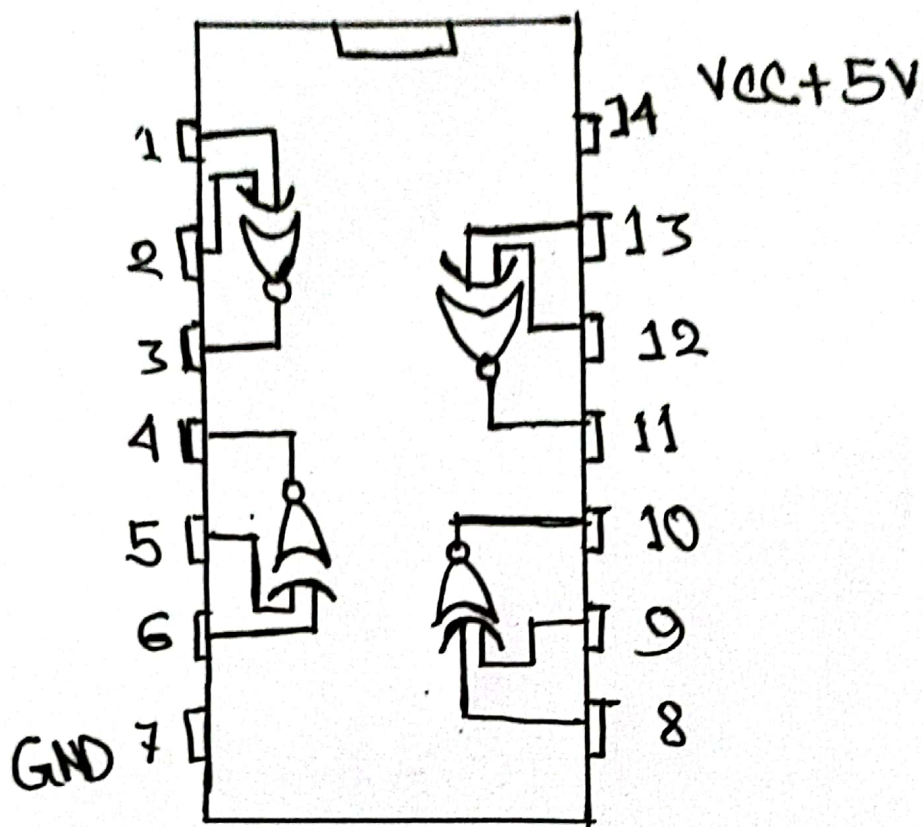
Fig: X-NOR Gate, pin layout of 74244

Pins left side (top to bottom): 1, 2, 3, 4, 5, 6, GND 7

Pins right side (top to bottom): 14 Vcc+5V, 13, 12, 11, 10, 9, 8

Results:

• Truth Table:

• AND Gate

Input		Output
A	B	
0	0	0
1	0	0
0	1	0
1	1	1

• OR Gate

Input		Output
A	B	
0	0	0
1	0	1
0	1	1
1	1	1

• NOT Gate

Input	Output
0	1
1	0

• NAND Gate

Input		Output
A	B	
0	0	1
1	0	1
0	1	1
1	1	0

• NOR Gate

Input		Output
A	B	
0	0	1
1	0	0
0	1	0
1	1	0

• XOR Gate

Input		Output
A	B	
0	0	0
1	0	1
0	1	1
1	1	0

• XNOR Gate

Input		Output
A	B	
0	0	1
1	0	0
0	1	0
1	1	1

Discussion:

- Problem with some faulty wires.
- Problem with some faulty IC units.
- Every gate gives their output according to the truth table.