Name of the Experiment :

Familiarization of Fundamental Logic Gates

Objective :

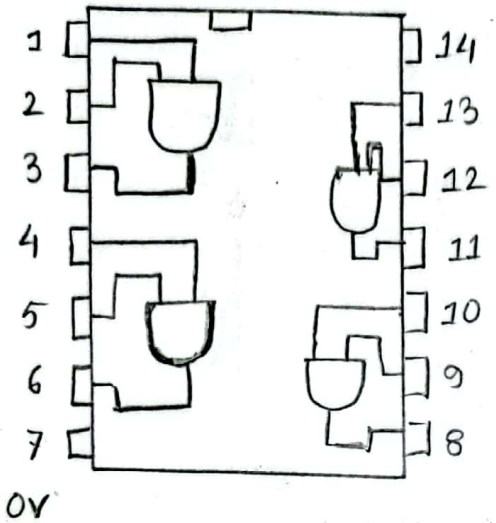
- To get familiarized with fundamental logic gates and demonstrate the input output relationship of 2- input AND (IC - 7408), OR (IC - 7432) and NOT (IC - 7404) gates by constructing their truth tables.
- To get familiarized with other logic gates like NAND (IC - 7400), NOR (IC - 7402), XOR (IC - 7486) and XNOR (IC - 4077)

Required Components and Equipments :

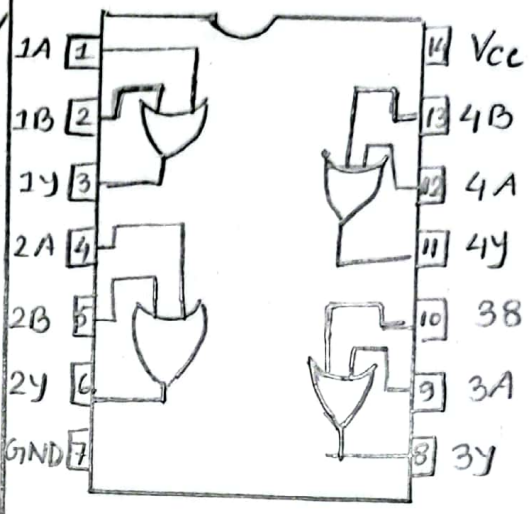
1) Breadboard
2) Connecting wires
3) IC - 7408,
   IC - 7432,
   IC - 7404,
   IC - 7400,
   IC - 7402,
   IC - 7486,
   IC - 4077

[P.T.O.]

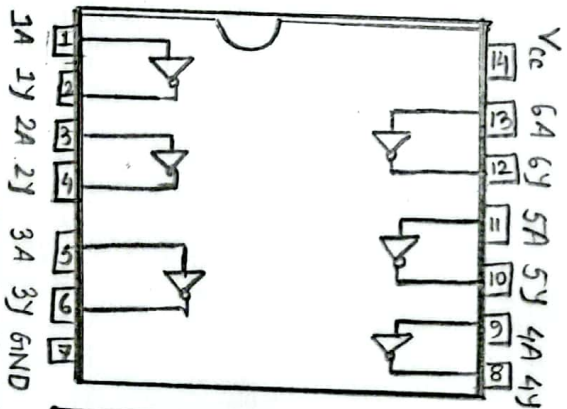
Experimental Setup :



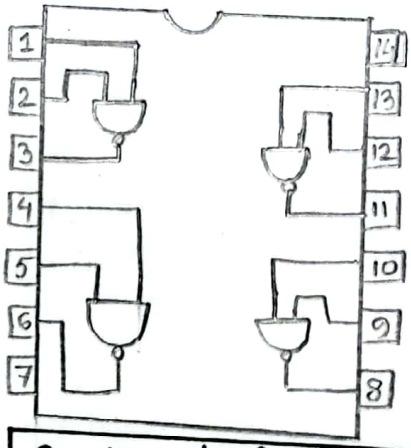
Pin layout of 7408 (AND)



Pin layout of 7432 (OR)

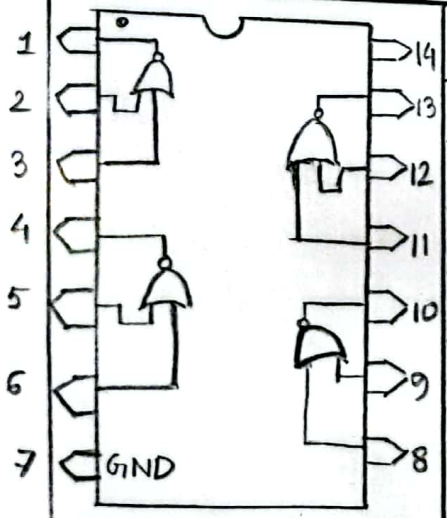


Pin layout of 7404 (NOT)

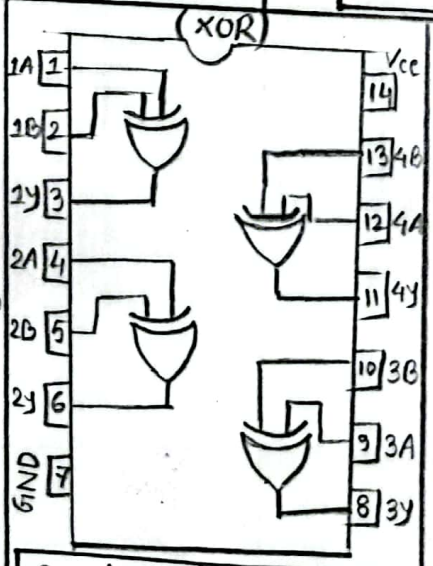


(NAND)

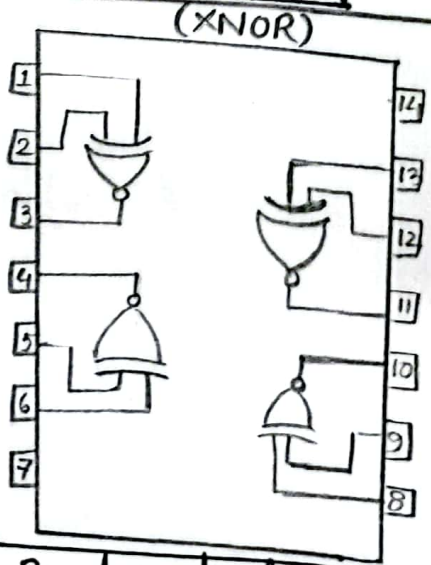
Pin layout of 7400



Pin layout of 7402 (NOR)



Pin layout of 7486



Pin layout of 4077

Result:

NOT Gate

A	A'
0	1
1	0

AND

A	B	AB
0	0	0
0	1	0
1	0	0
1	1	1

XNOR Gate

A	B	
0	0	1
0	1	0
1	0	0
1	1	1

Bharana

OR Gate

A	B	A+B
0	0	0
0	1	1
1	0	1
1	1	1

Bharana

NAND Gate

Bharana.

A	B	(AB)'
0	0	1
0	1	1
1	0	1
1	1	0

XOR Gate

A	B	A ⊕ B
0	0	0
0	1	1
1	0	1
1	1	0

NOR Gate

Bharana

A	B	(A+B)'
0	0	1
0	1	0
1	0	0
1	1	0

[P.T.O.]

Discussions :

- We faced difficulties with some faulty wires.
- According to the truth tables we got as results, it can be seen easily that every gate gives the correct output by indicating the LED light's being ON & OFF.