CSE260 Lab Report

Experiment Name: Familiarization of fundamental logic gates.

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Section: 09
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Name of experiment.

Familiarization of fundamental logic gates.

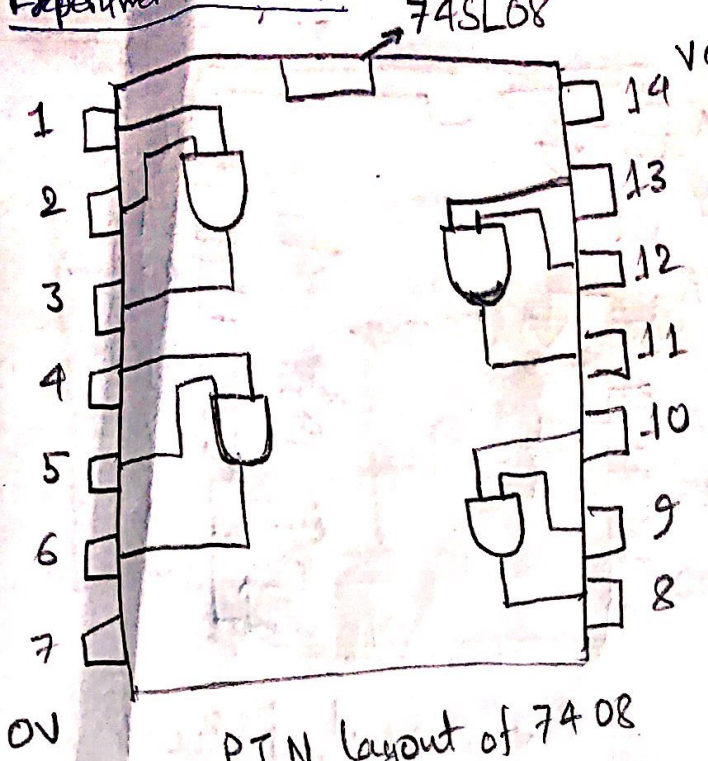
Object:

- To get familiarised with fundamental logic gates and demostrate the input output relationship of 2-input AND (IC-7408), OR (IC-7432) and NOT (IC-7404) gates by constructing their truth table
- To get familiarized with other logic gates like NAND (IC-7400), NOR (IC-7402), XOR (IC-7486) and XNOR (IC-74266)

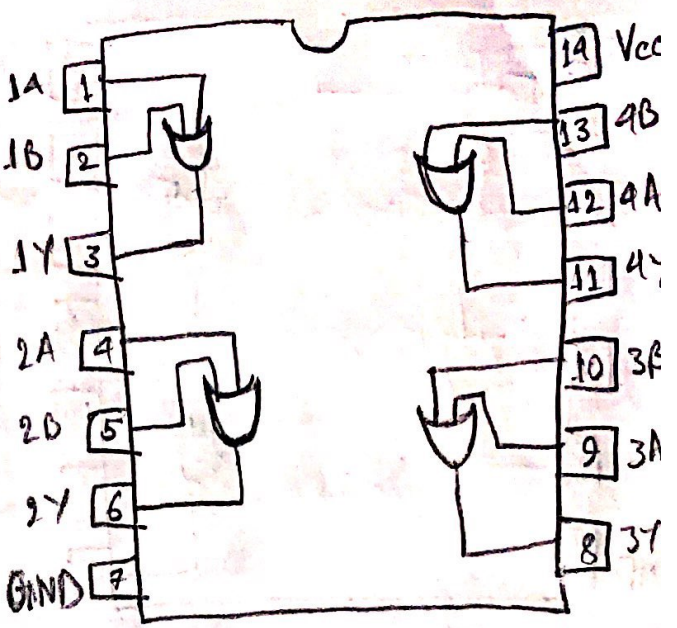
Required components:

* AND
* OR
* NOT
* NOR
* NAND
* XOR
* LOGIC STATE
* LOGIC PROBE
* LED - BLUE
* LED - GREEN
* LED - ORANGE
* LED - PINK
* LED - PURPLE
* LED - YELLOW
* LED - RED.

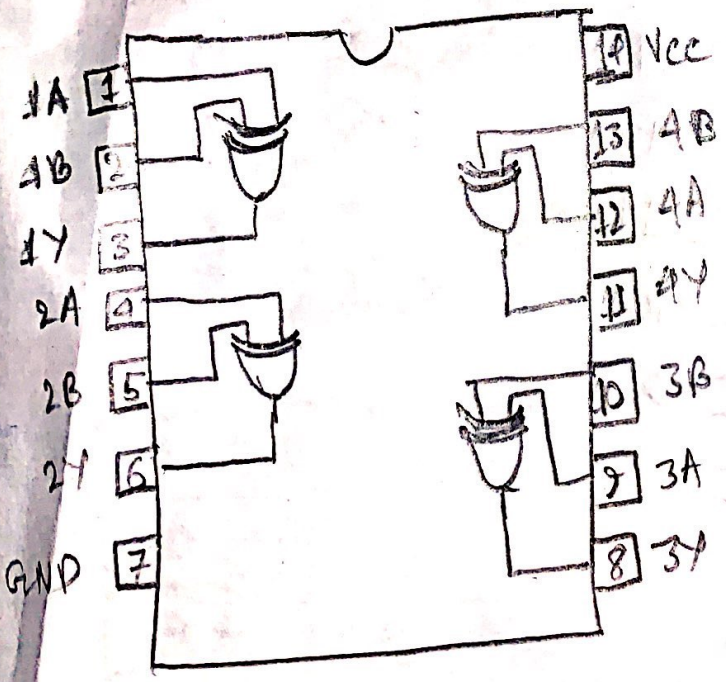
Experimental Setup :



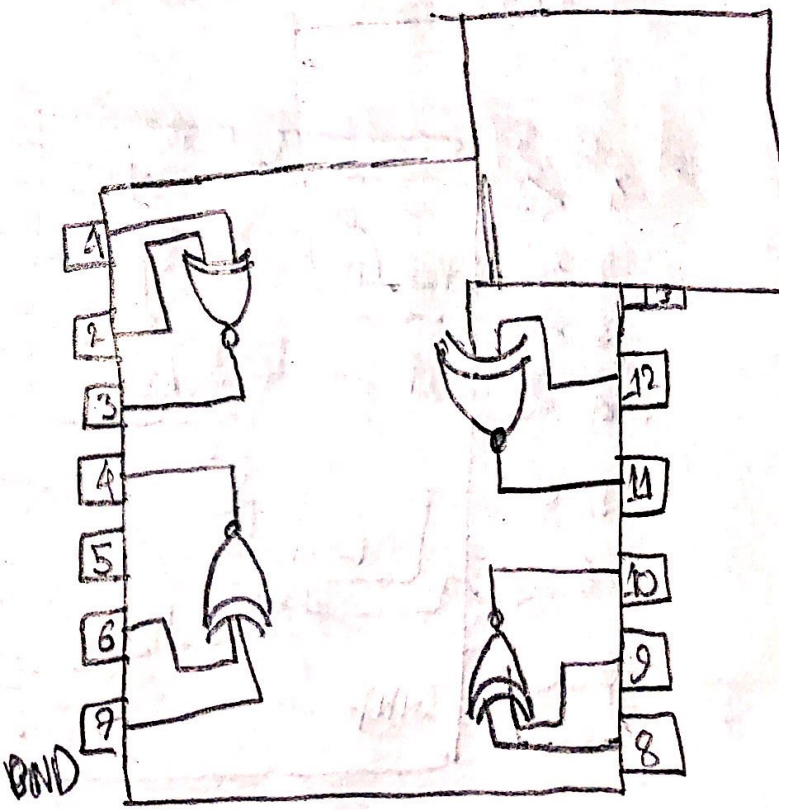
PIN layout of 7408



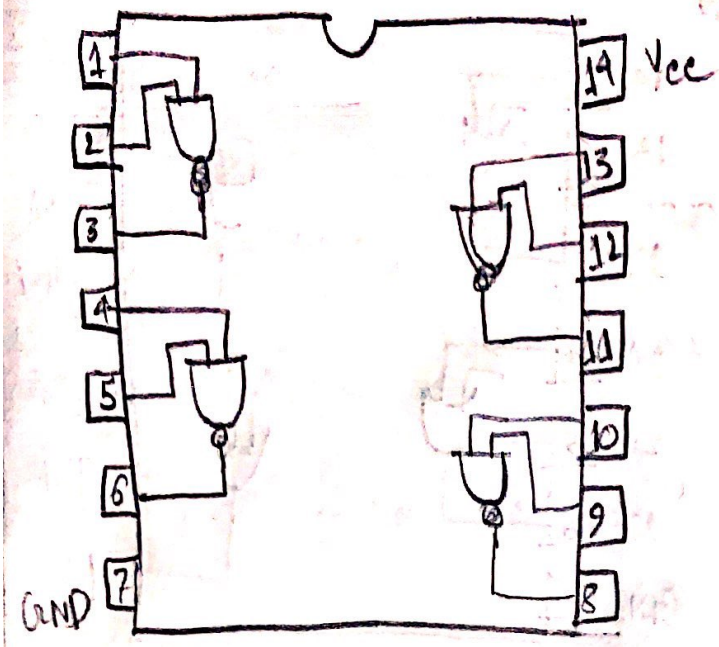
Pin Layout of 7432



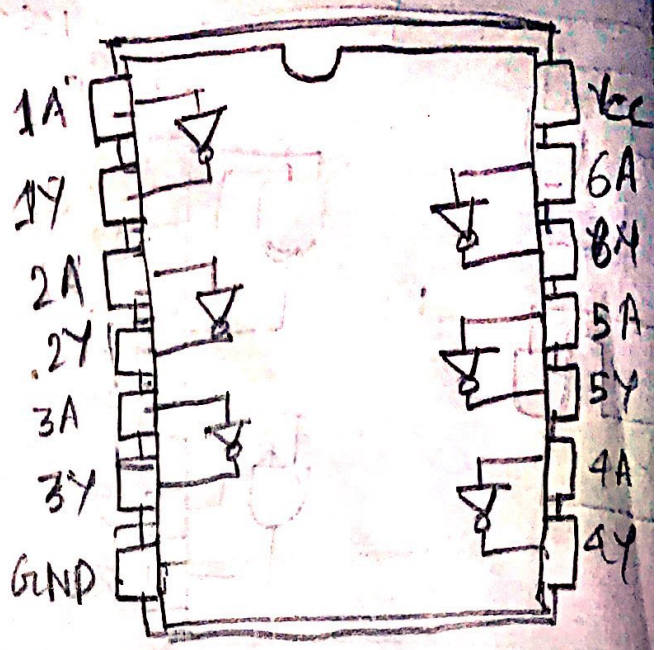
Pin layout of 7486



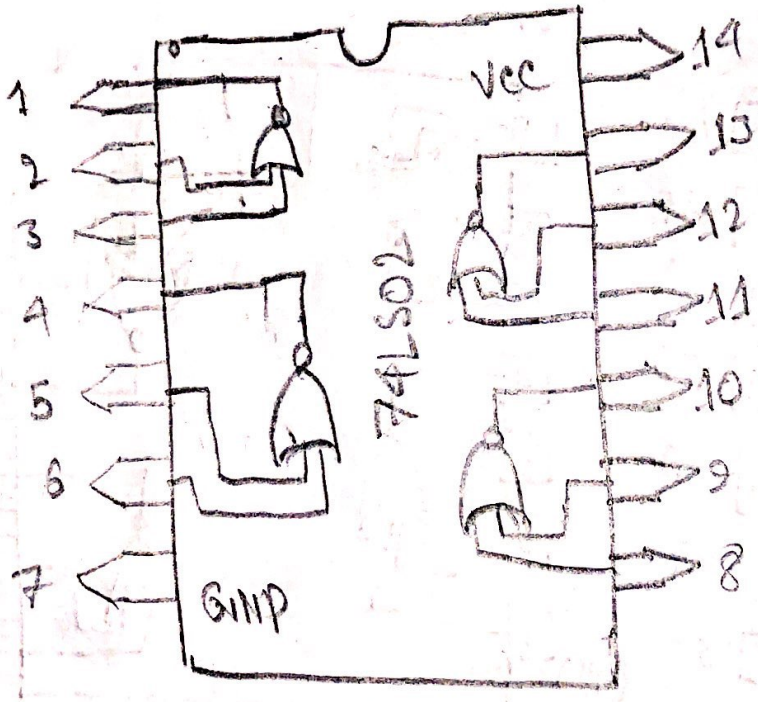
Pin layout of 74266



Pin layout of 7400



Pin Layout of 7400



Result / Truth Table :

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

AND

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

OR

A	B	$\overline{A+B}$
0	0	1
0	1	0
1	0	0
1	1	0

NOR

A	B	$\overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

NAND

A	B	A⊕B
0	0	0
0	1	1
1	0	1
1	1	0

XOR

A	B	$\overline{A \oplus B}$
0	0	1
0	1	0
1	0	0
1	1	1

XNOR

A	$\overline{A}$
0	1
1	0

NOT

Discussion:

By observing the truth table we can see that, every gate needs two inputs except NOT which needs only one input.

NAND gate is the combination of AND gate and NOT gate and NOR gate is the combination of OR gate and NOT gate and XOR gate ~~is the com~~ and NOT gate combine to turn into XNOR gate.