

## CSE260 Lab Report

### Experiment: Familiarization of Fundamental Logic Gates

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## CSE260 Lab Report

Experiment Name: Familiarization of Fundamental Logic Gates

Objective :

- To get familiarized with fundamental logic gates and demonstrate the input output relationship of 2-input AND (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)

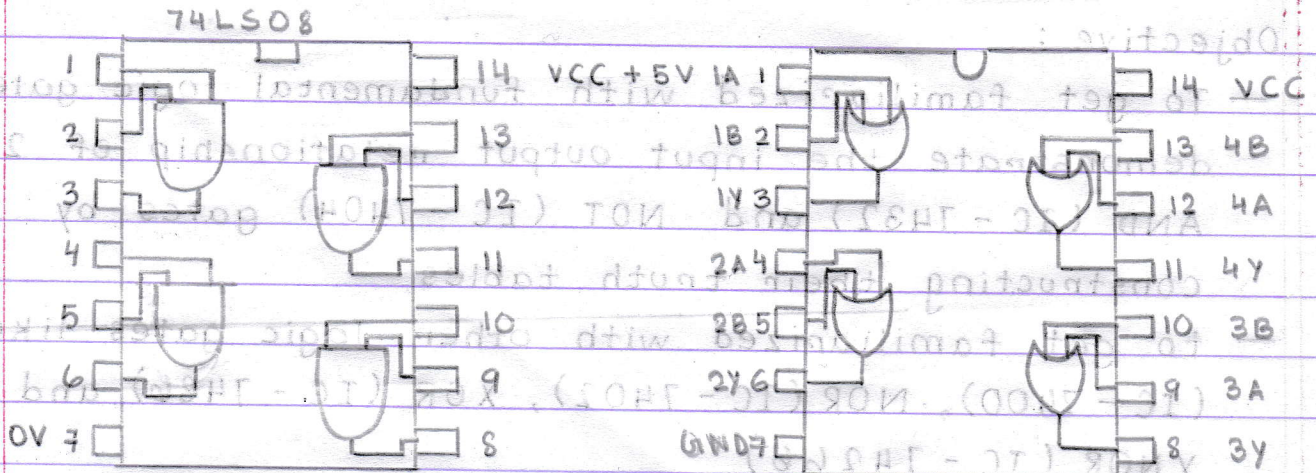
Required Components and Equipments :

- AND
- FAN-DC
- LED - GREEN
- LED - RED
- LOGIC PROBE (B16)
- LOGIC STATE
- NAND
- NOR
- NOT
- OR



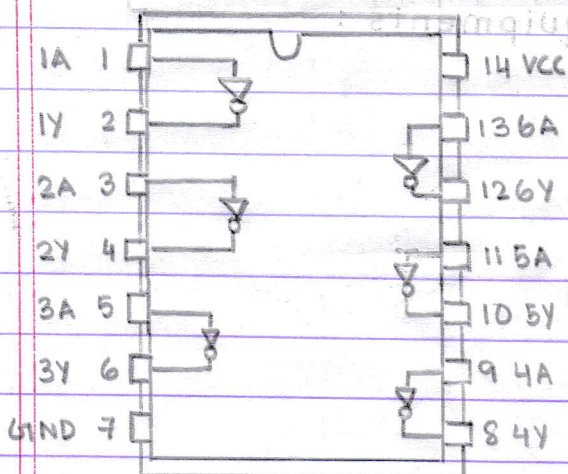
- XOR
- XNOR (4077)
- WIRES
- GROUND

### Experimental Setup:

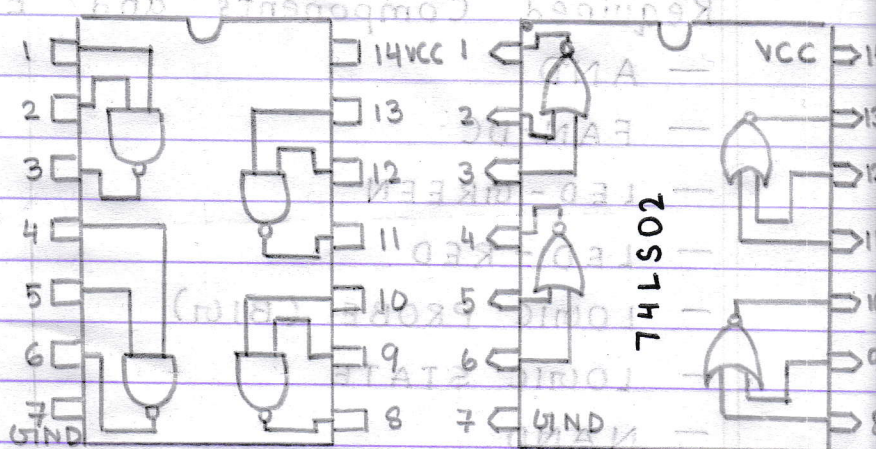


Pin layout of 7408

Pin layout of 7432

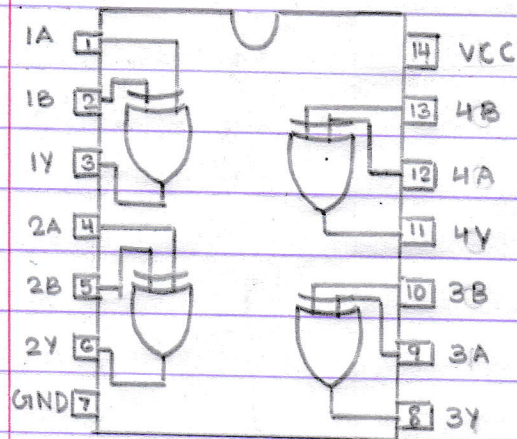


Pin layout of 7404

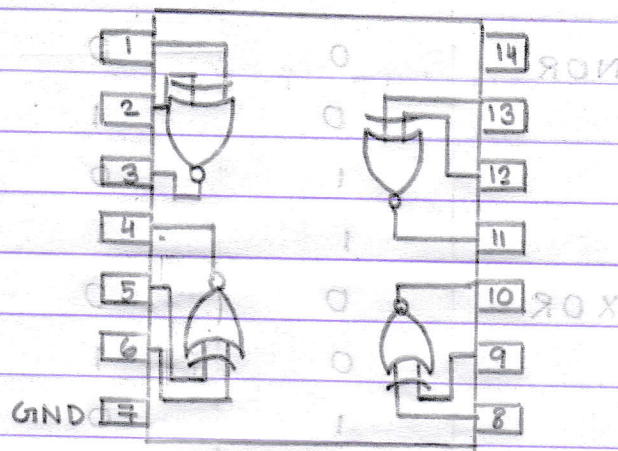


Pin layout of 7400





Pin layout of 7486



Pin layout of 74266

### Results (Truth Table)

GATE	INPUT 1	INPUT 2	OUTPUT
AND	0	0	0
	0	1	0
	1	0	0
	1	1	1
OR	0	0	0
	0	1	1
	1	0	1
	1	1	1
NAND	0	0	1
	0	1	1
	1	0	1
	1	1	0
NOT	1		1
	0		0



NOR	0	0	1
	0	1	0
	1	0	0
	1	1	0
XOR	0	0	0
	0	1	1
	1	0	1
	1	1	0
XNOR	0	0	1
	0	1	0
	1	0	0
	1	1	1

## Discussion

This lab experiment has helped me to get familiarised with the Proteus software as it is one such software which I did not use before. I tried to navigate throughout the entire software by taking one step at a time, as shown in the methods during the online lab class. At first, I attained all the necessary components required for the experiment and began to place them accordingly. Initially, I faced some difficulties to drag the components into the designing area, but soon, I realised that we only had to select a particular component and double-click on the designing area to place the component. Then, I

inserted all the necessary components for each logic gate and joined all the loose ends with wires. I used different components for providing outputs such as a fan, red and green LED lights, in order to explore the software a little more. Once all the ~~seperators~~ apparatus was set up, I ~~she~~ pushed the play button and changed the inputs to get different outputs. Then, I computed the inputs and outputs into the truth tables using the outputs from the software and prior knowledge. At the beginning, it was a ~~ti~~ little difficult to move about the screen, ~~beco~~ but now it is becoming more convenient. As we are unable to attend live classes in the university, I felt that Proteus is ~~quite~~ a good alternative. I think that even without the practical experiments, I could still understand most of how the experiment would be in reality.