Cse 260

Lab Assignment - 1

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Ans:

(1) Name of the Experiment:

Familiarization of Fundamental Logic Gates

(2) 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 ~~logit~~ logic gates like NAND (IC - 7400), NOR (IC - 7402), XOR (IC - 7486) and XNOR (IC - 74266).

(3) Required Components and Equipments:

Logic Gates (AND gate, NOT gate, OR gate, XOR gate, XNOR gate, NAND gate, NOR gate),

Inputs (using logicstate),

LEDs (Blue and other colors),

Power Source.

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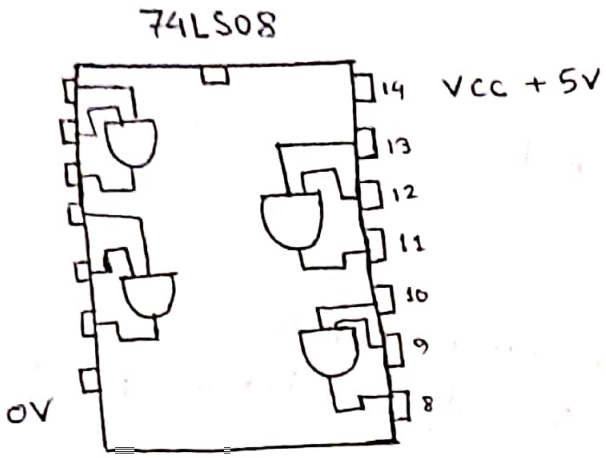
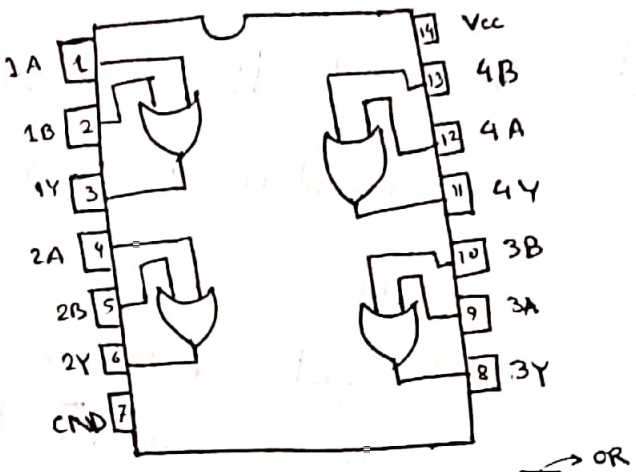
Ans no:

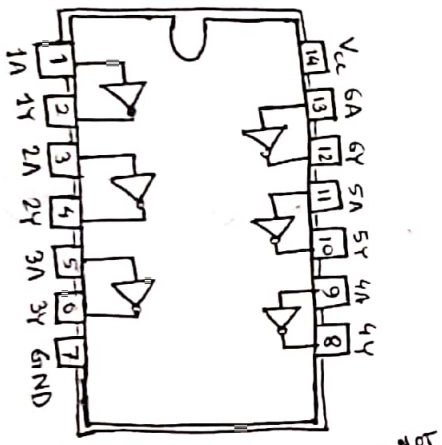
(4) Experimental Setup:



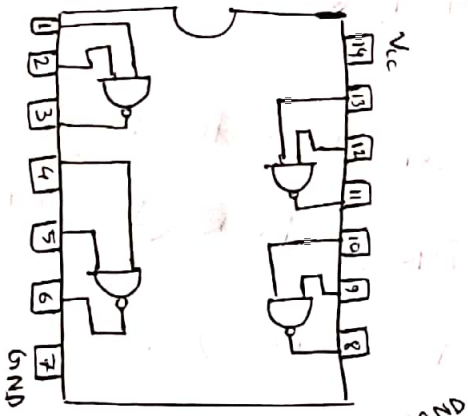
Pin layout of 7408 → AND



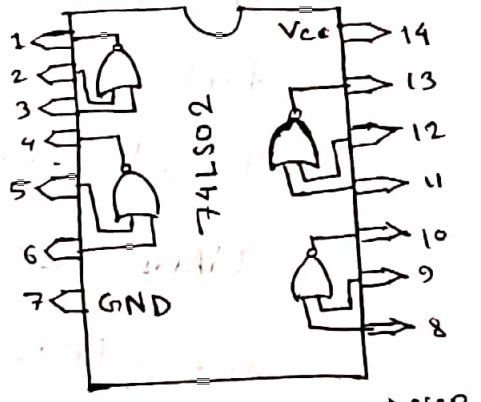
Pin layout of 7432 → OR



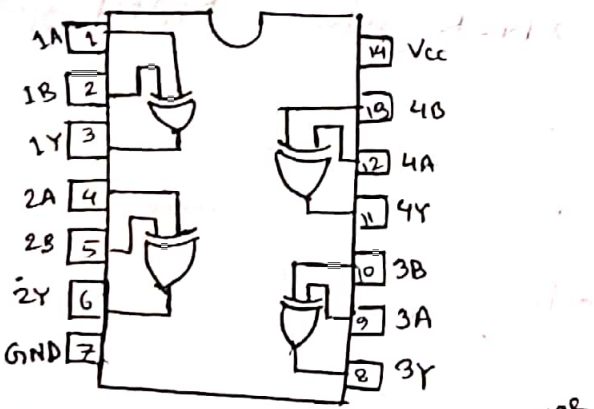
Pin layout of 7404 → NOT



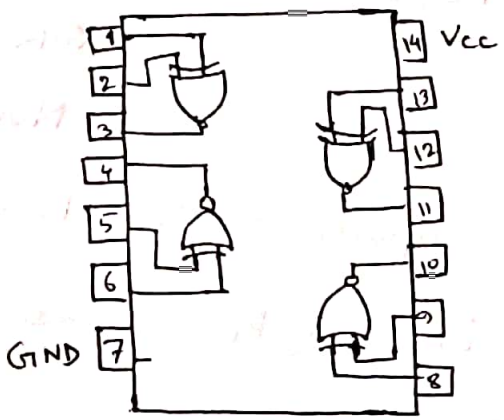
Pin layout of 7400 → NAND



Pin layout of 7402 → NOR



Pin layout of 7486 → XOR



Pin layout of 74266 → XNOR

Answer:

(5) Results (Truth Table) and Discussions:

Results (Truth Table):

A	B	AND	OR	NAND	NOR	XOR	XNOR
0	0	0	0	1	1	0	1
0	1	0	1	1	0	1	0
1	0	0	1	1	0	1	0
1	1	1	1	0	0	0	1

Discussions:

My Outcomes were all as stated by the Truth Table: When 1, the LED light turns blue, when 0, the LED light does not turn on i.e it is off.

Limitation: Only turn on and off, no in-between switch, only 1 and 0.

Challenges: No Library is visible in Proteus software unless administrator mode turned on.

What I learnt: Logic gates, How to use Proteus

P.T.O

→ continuation.

5) Software, Different circuit materials (i.e. IC, Breadboard, Trainer Board) introduction, How the Logic gates are implemented in Proteus, inner Structures of different ICs (Integrated Circuits).