CSE260 LAB ASSIGNMENT 6

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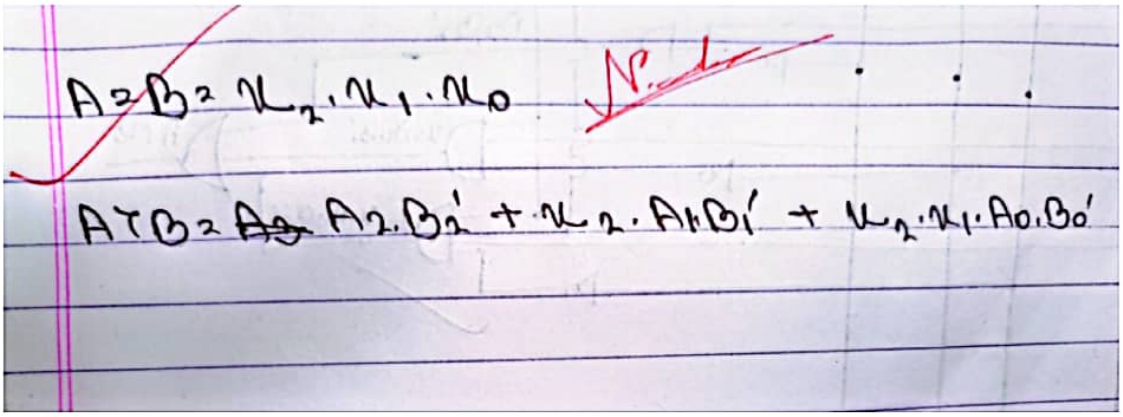
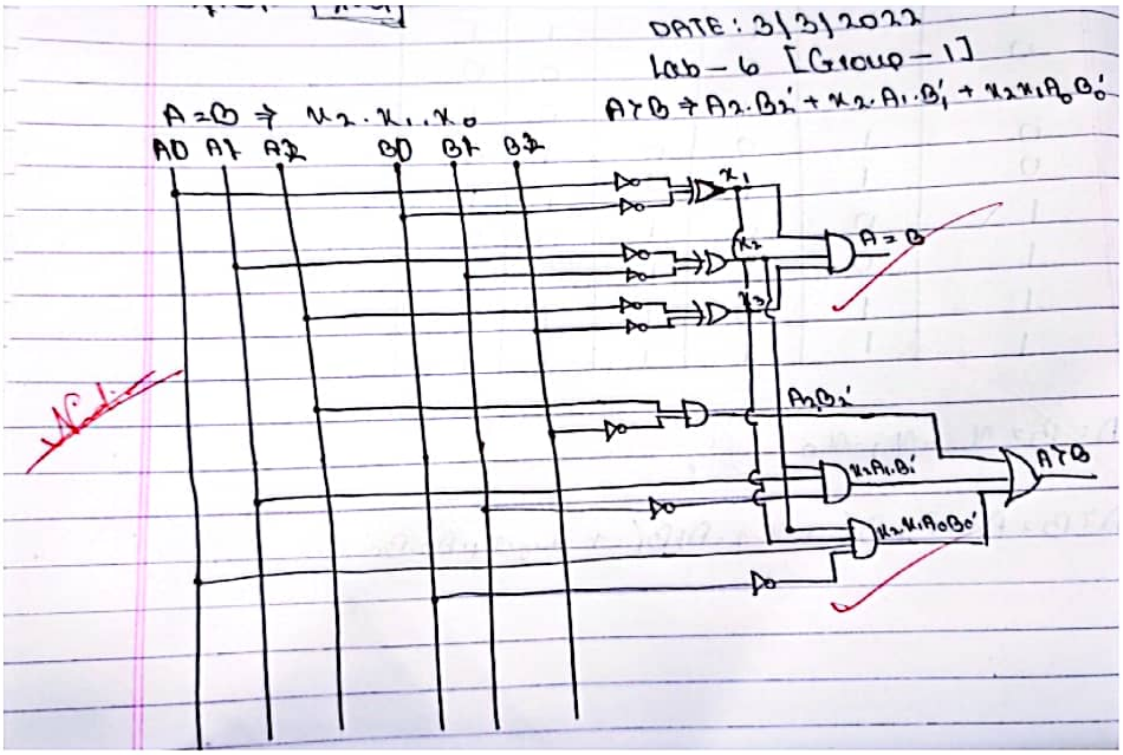
SECTION: 06

CSE 260 LAB ASSIGNMENT 6

GROUP 1





Lab Assignment 6

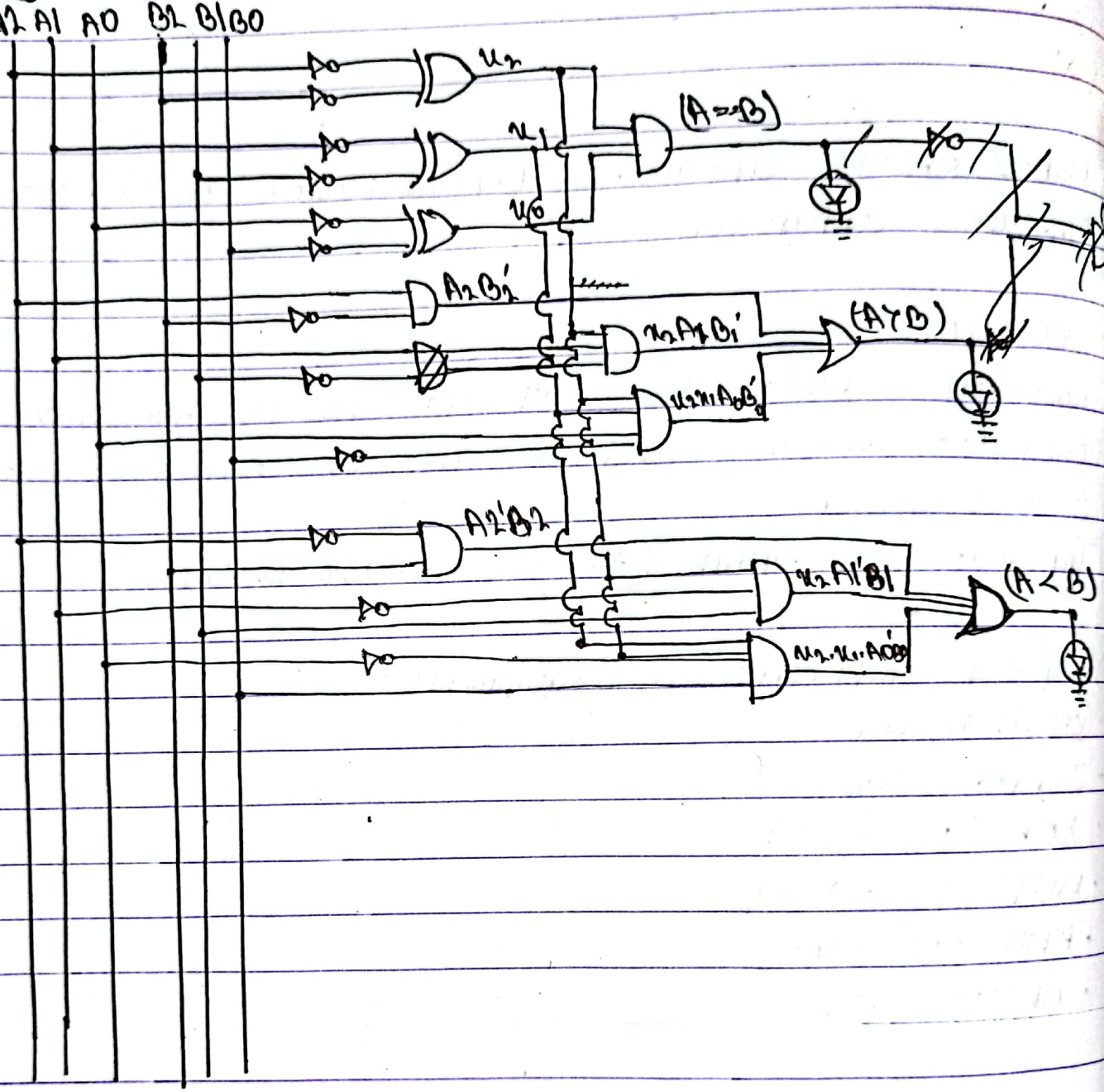
Report

(1) Name of the experiment: Implementation of 3-bit Magitude Comparator

(2) Objective :
- Draw the circuit that will act as a Magnitude Comparators. Circuit should be able to compare two 3 bits numbers
- Implement the circuit (for two 3-bit numbers)

(3) Required components and equipments :
- Bread board
- Jumper wires
- XOR (IC 7486)
- NOT (IC 7404)
- AND (IC 7408)
- OR (IC 7432)

(4) Experimental Setup



(A) Results and Discussions

(a) A = B

When the 3 inputs for A and 3 inputs for B are equal to one another (A2 = B2, A1 = B1, A0 = B0), the LED light glows. The light glows because when A = B = 1 ~~and A~~ or A = B = 0, for these inputs, the output always is 1 in reference to the truth table for XNOR.

(b) A > B

If A2 > B2 or (A2 = B2 and A1 > B1) or (A2 = B2 and A1 = B1 and A0 > B0), the light glows. For A2 > B2, the output is 0 and the other 2 outputs are either 1 or 0. According to the truth table for OR gate, the output is always 1 for any inputs except for all 0's. ~~As~~ This case occurs in all the above scenarios, as well, where the outputs from the AND gates which are the inputs to the OR gates, provide ~~with either 1 or 0~~ 0 1, 1 0 or 1 1 any inputs except 0 0. ~~Thus, the light glo~~

(c) A < B

If A2 < B2 or (A2 = B2 and A1 < B1) or (A2 = B2 and A1 = B1 and A0 < B0), the light glows. For A2 < B2, the output is 0 and the other 2 outputs are either 1 or 0. According to the truth table for OR gate, the

output is always 1 for any inputs except for all 0's. This case occurs in all the above 3 scenarios as well, where the outputs from AND gates, which are the inputs to the OR gate, provide any inputs except 000.

- If the circuit for A < B and A = B are connected together using a NOR gate, the output will give the result for A > B.