Experiment Name: Excess-3 to BCD and BCD to Excess-3 conversion.

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Session: 2016-17

Course: CSE-2112

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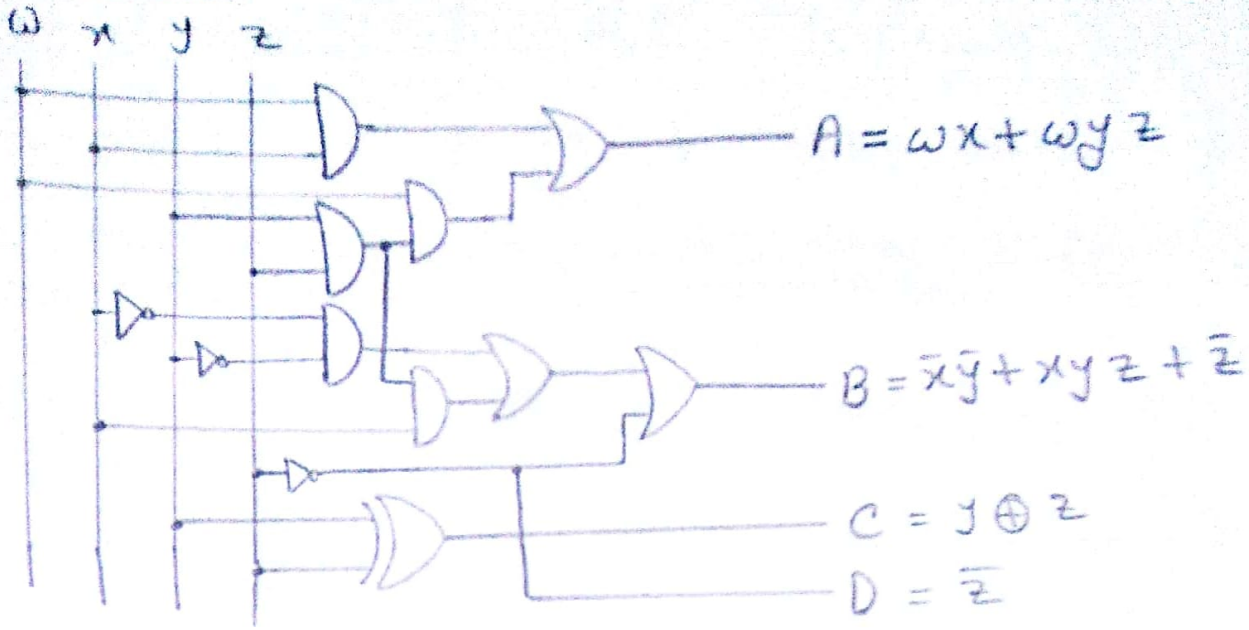
Experiment: Excess-3 to ~~Binary~~ BCD conversion.

Theory: Excess-3 to BCD conversion is a conversion system by which we can convent an excess-3 code to a binary code. In 4-bit excess-3 to BCD conversion we can get BCD code of 0 to 9. But there are 15 inputs available in 4-bit excess-3 code. There we don't get outputs for first 3 and last 3 total 6 inputs. So the should be skipped.

Instruments: wire, bread-board, power source, Not gate, AND gate, OR gate, XOR gate.

Circuit:



Truth Table:

w	x	y	z	Verification	A	B	C	D
0	0	1	1	✓	0	0	0	0
0	1	0	0	✓	0	0	0	1
0	1	0	1	✓	0	0	1	0
0	1	1	0	✓	0	0	1	1
0	1	1	1	✓	0	1	0	0
1	0	0	0	✓	0	1	0	1
1	0	0	1	✓	0	1	1	0
1	0	1	0	✓	0	1	1	1
1	0	1	1	✓	1	0	0	0
1	1	0	0	✓	1	0	0	1

Result and discussion: From the circuit we have designed the results we got is similar to equivalent BCD code of given excess-3 code. So the circuit and equations are right.

Pre-caustion:

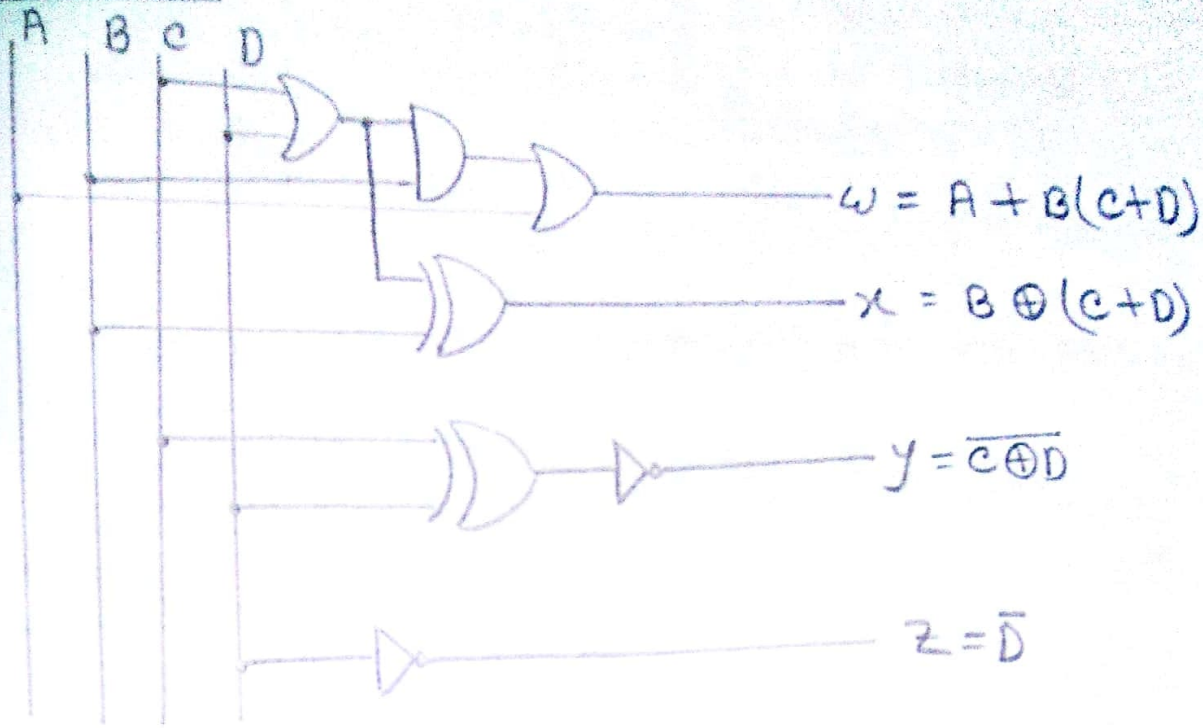
1. Connect the circuit when design is complete
2. Please cheack the circuit before connecting.
3. Ware shoes in the lab.
4. After finishing the experiment switch off the power source.

Experiment: BCD to Excess-3 conversion.

Theory: BCD to Excess-3 conversion oppose to Excess-3 to BCD conversion. By using BCD to Excess-3 conversion we can convert a BCD code to equivalent excess-3 code. In 4-bit BCD to excess-3 conversion we can convert 10 values of BCD to excess-3.

Instruments: wire, bread-board, power source, Not gate, AND gate, OR gate, XOR gate.

circuit:



Truth Table:

A	B	C	D	Verification	w	x	y	z
0	0	0	0	✓	0	0	1	1
0	0	0	1	✓	0	1	0	0
0	0	1	0	✓	0	1	0	1
0	0	1	1	✓	0	1	1	0
0	1	0	0	✓	0	1	1	1
0	1	0	1	✓	1	0	0	0
0	1	1	0	✓	1	0	0	1
0	1	1	1	✓	1	0	1	0
1	0	0	0	✓	1	0	1	1
1	0	0	1	✓	1	1	0	0

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