



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SEM 1 2020/2021: SECTION 01

Digital Logic

LAB 1

Students Information

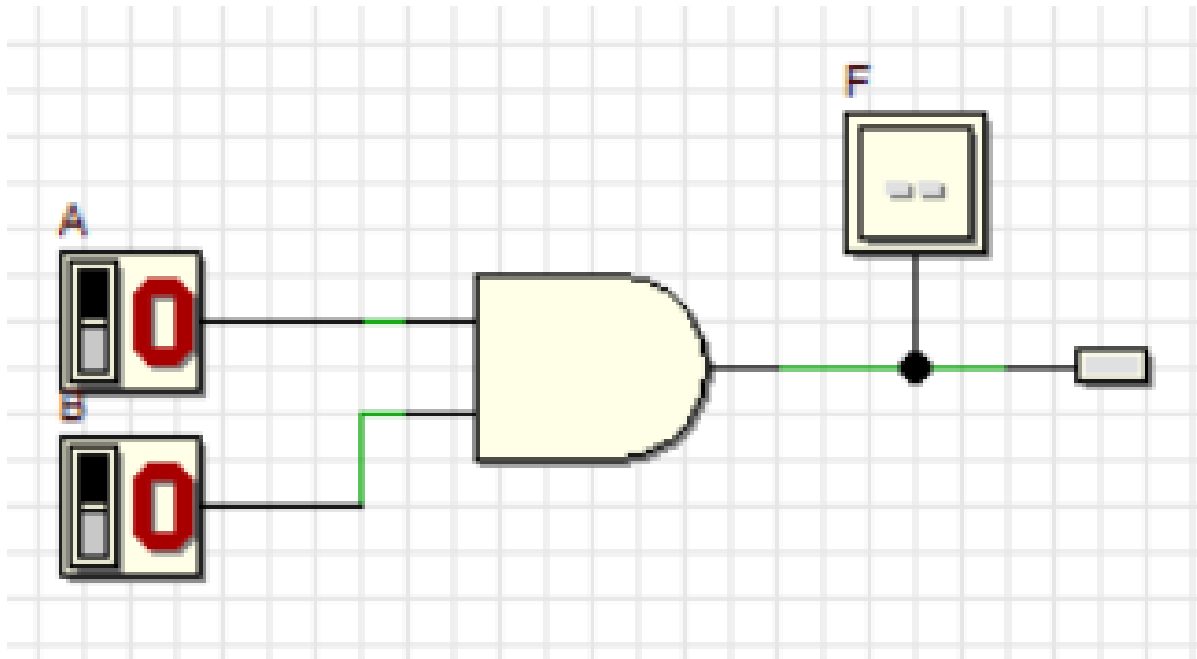
Name : 1. HANIS RAFIQAH BINTI HISHAM RAZULI (A20EC0041)
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(A20EC0108)

Lecturer : SIR FIROZ BIN YUSUF PATEL DAWOODI

Laboratory Work

Part 1

1. Construct Circuit 1 on the breadboard. Connect all inputs (A, B) to a switches and output F to LEDs.



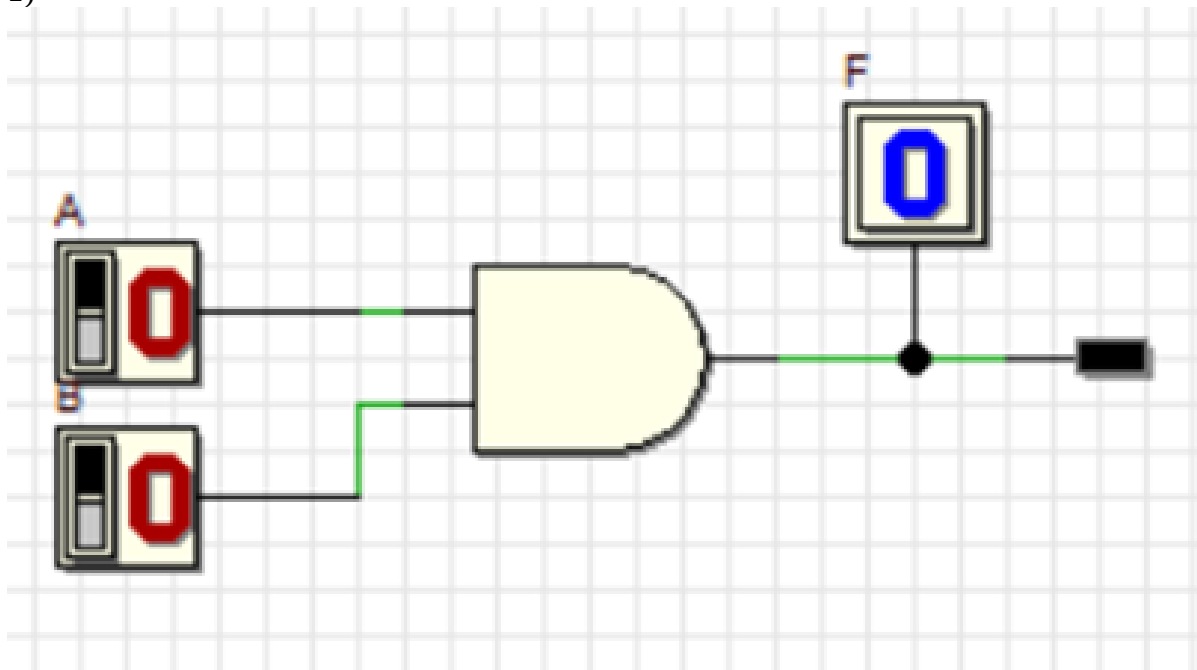
Circuit 1

2. Test Circuit 1 and fill in Truth Table 5 for the circuit response to all possible input combinations. The Truth Table 5 should match the Truth Table 1 prepared in the Preliminary Work.

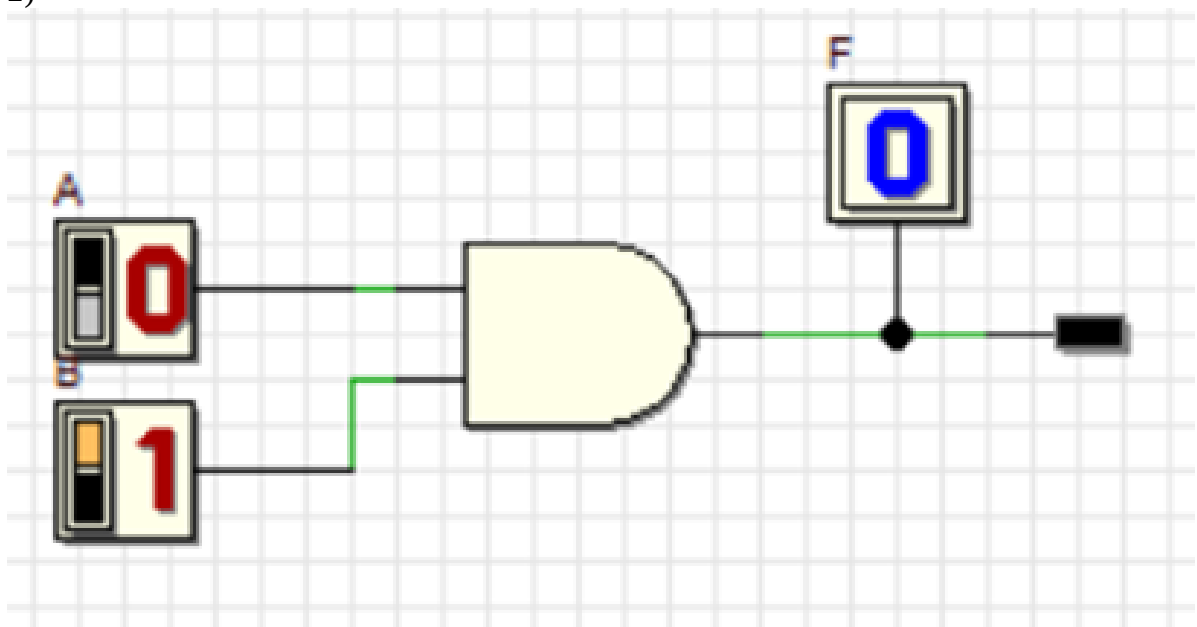
Truth Table 5

Input		Output
A	B	F
0	0	0
0	1	0
1	0	0
1	1	1

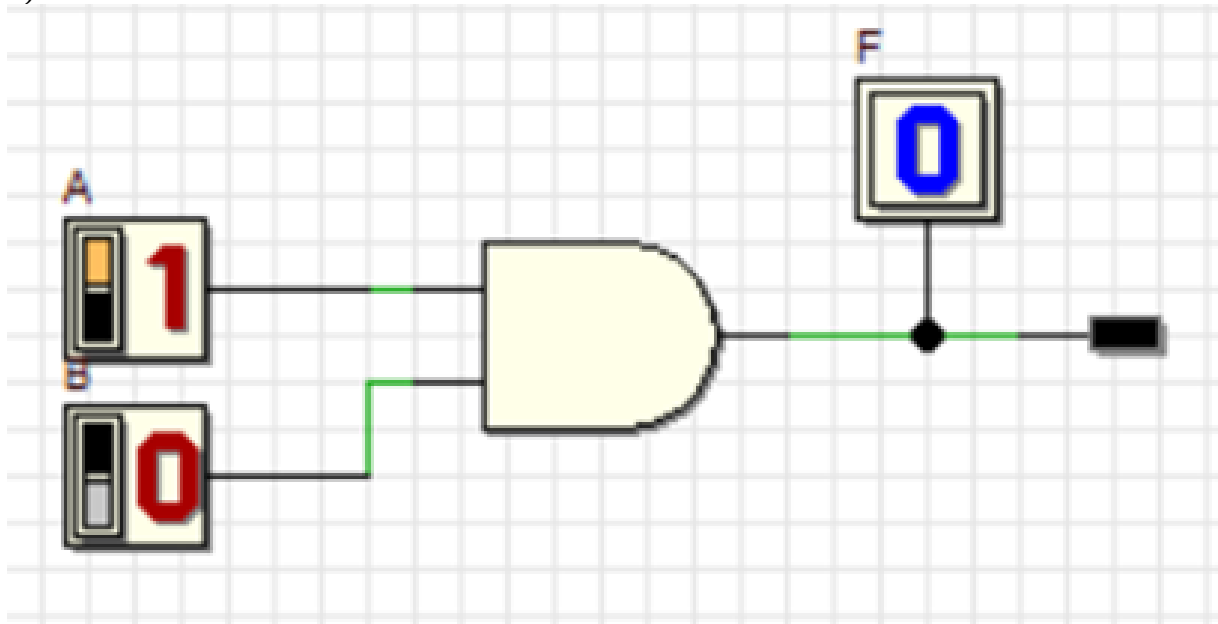
1)



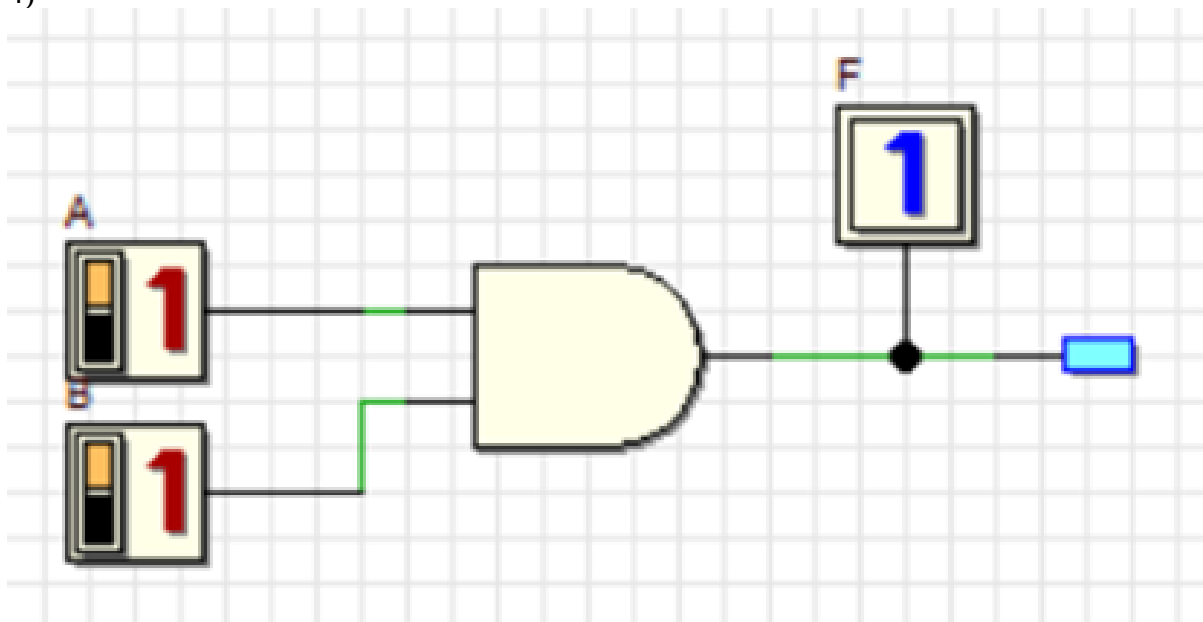
2)



3)

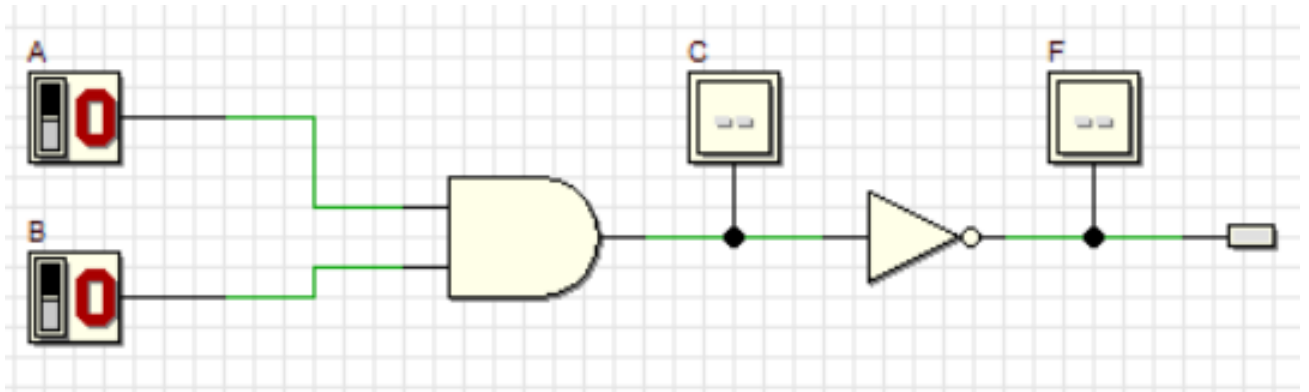


4)

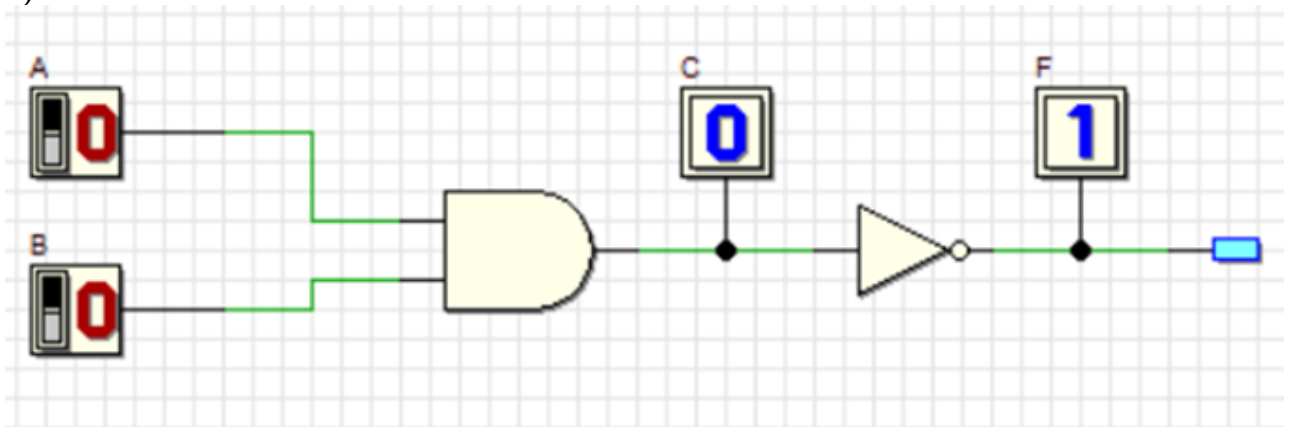


Part 2

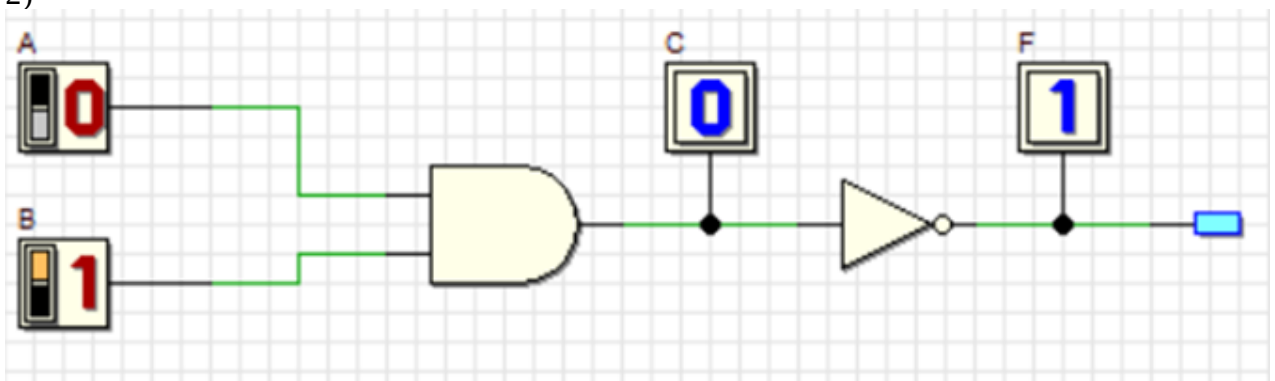
1. Construct Circuit 2 on the breadboard. Connect all inputs (A,B) to a switches and output C and F to LEDs.



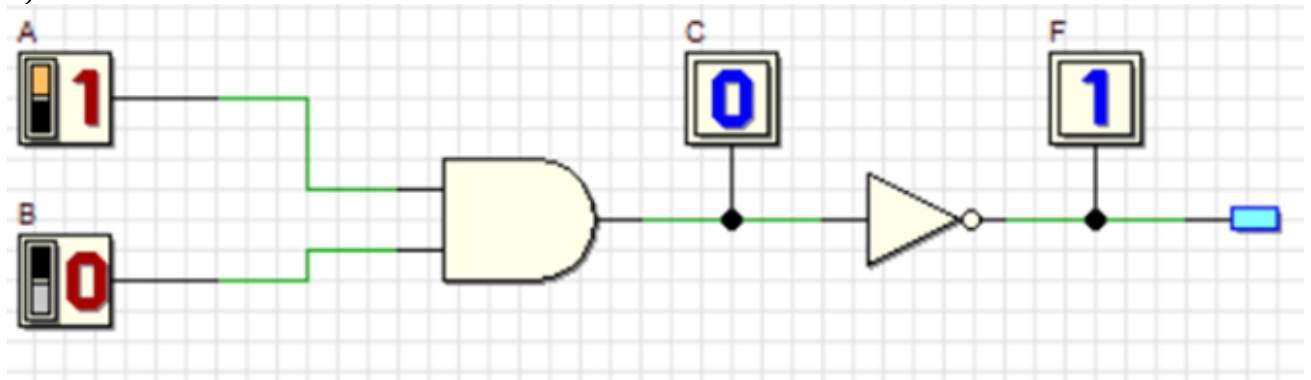
1)



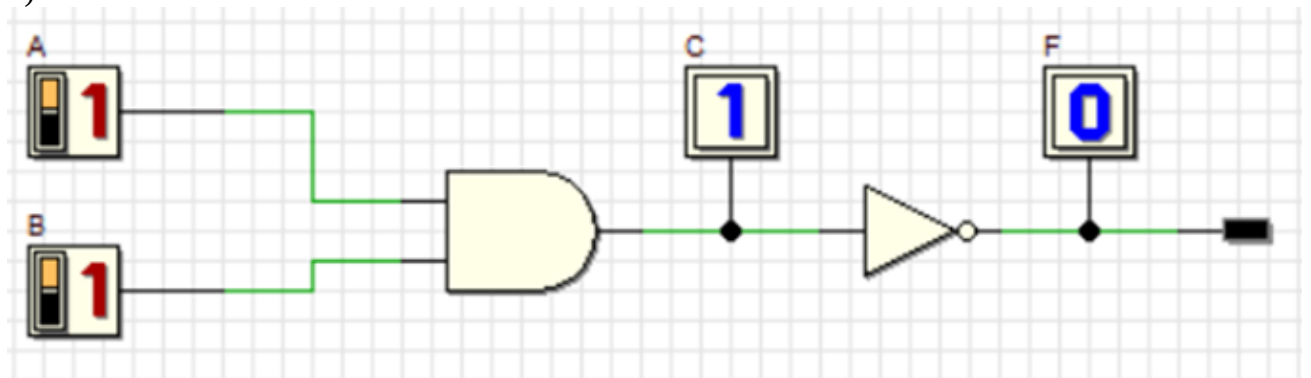
2)



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4)



4. Test Circuit 2; fill in Truth Table 6, for the circuit response to all possible input combinations.

Truth Table 6

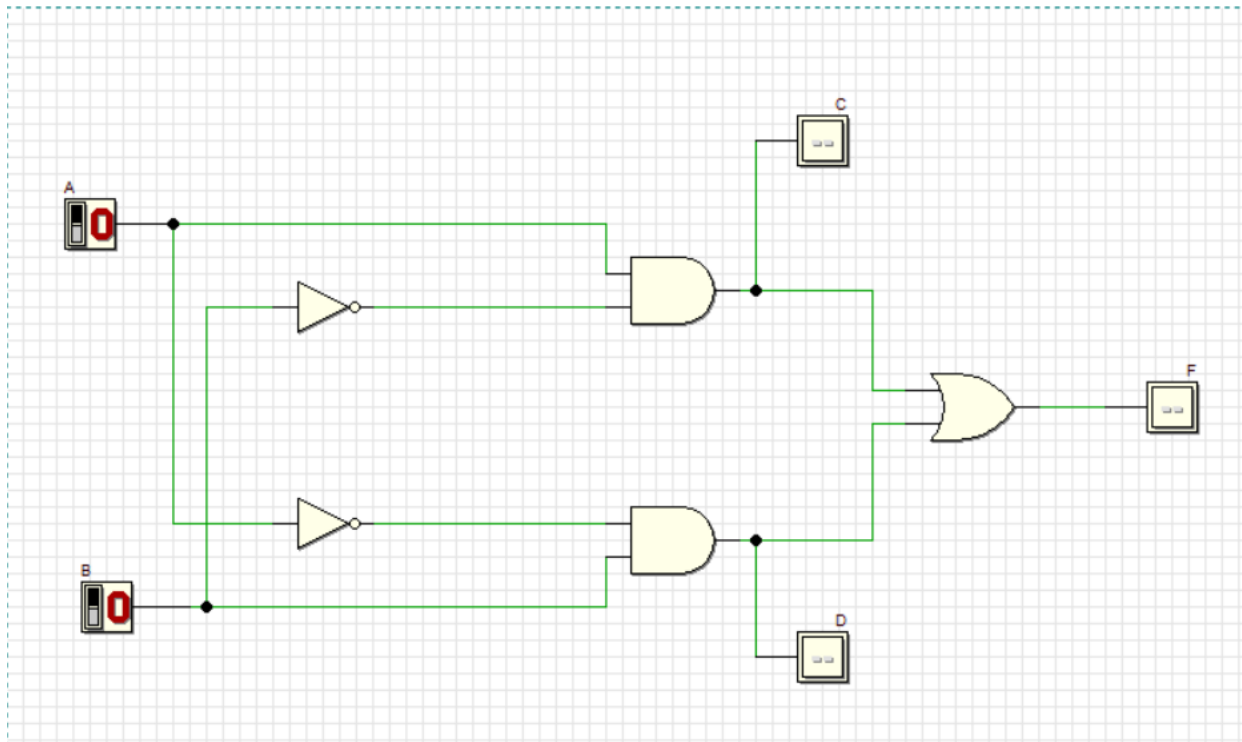
A	B	C	F
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

5. Compare Truth Table 6 to Truth Table 2. What conclusion can you make?

The NOT is before AND for Truth Table 2 while the NOT is after AND for Truth Table 6.

Part 3

6. Construct circuit 3 on the breadboard. Connect all inputs (A, B) to a switches and output C, D and F to LEDs.



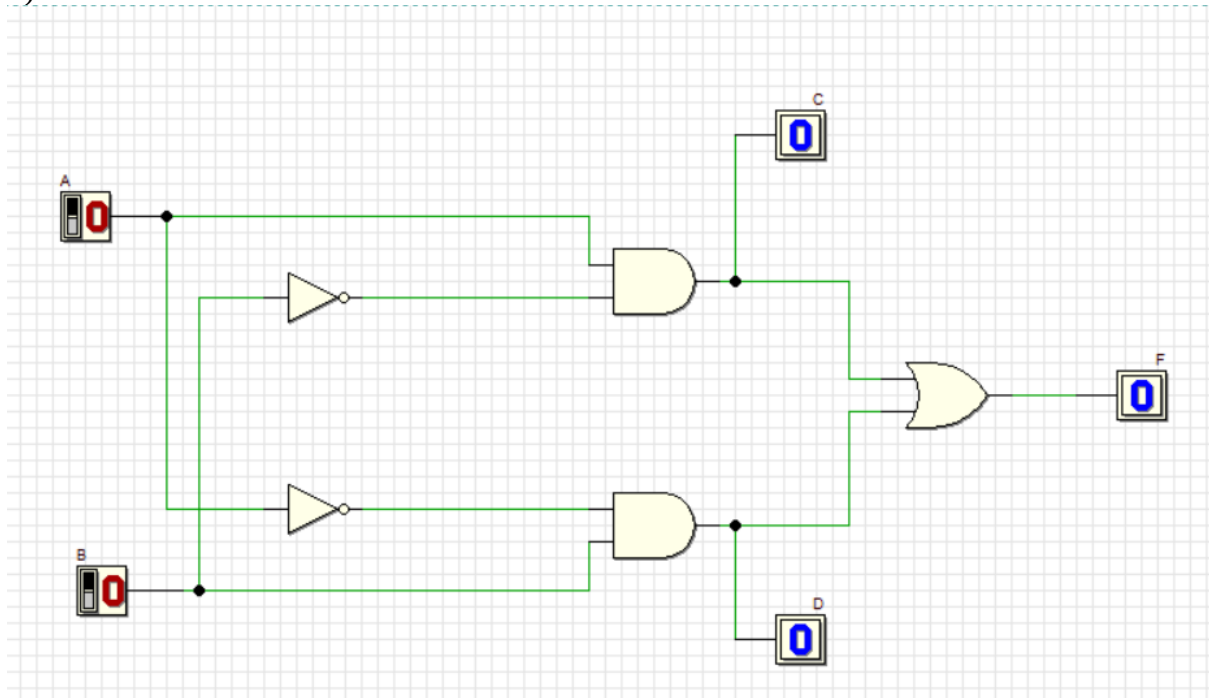
Circuit 3

Truth Table 7

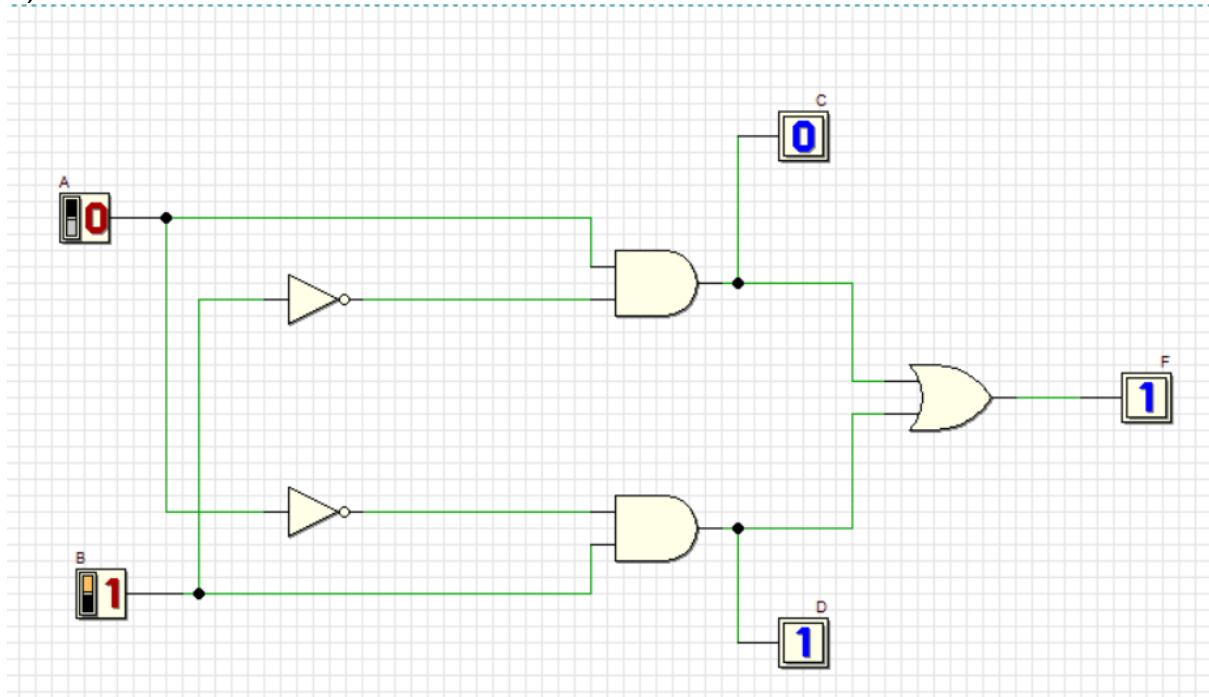
A	B	C	D	F
0	0	0	0	0
0	1	0	1	1
1	0	1	0	1
1	1	0	0	0

7. Test Circuit 3; fill in Truth Table 7 for the circuit outputs (C, D and F) for all possible input combinations.

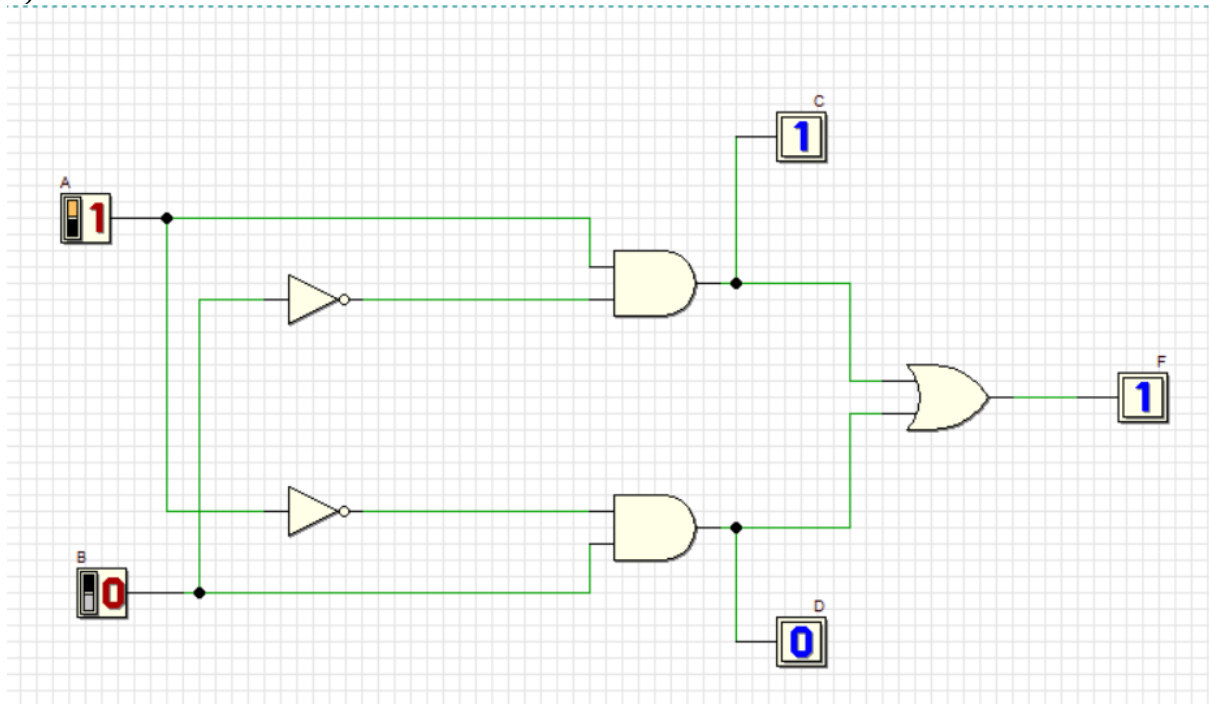
1)



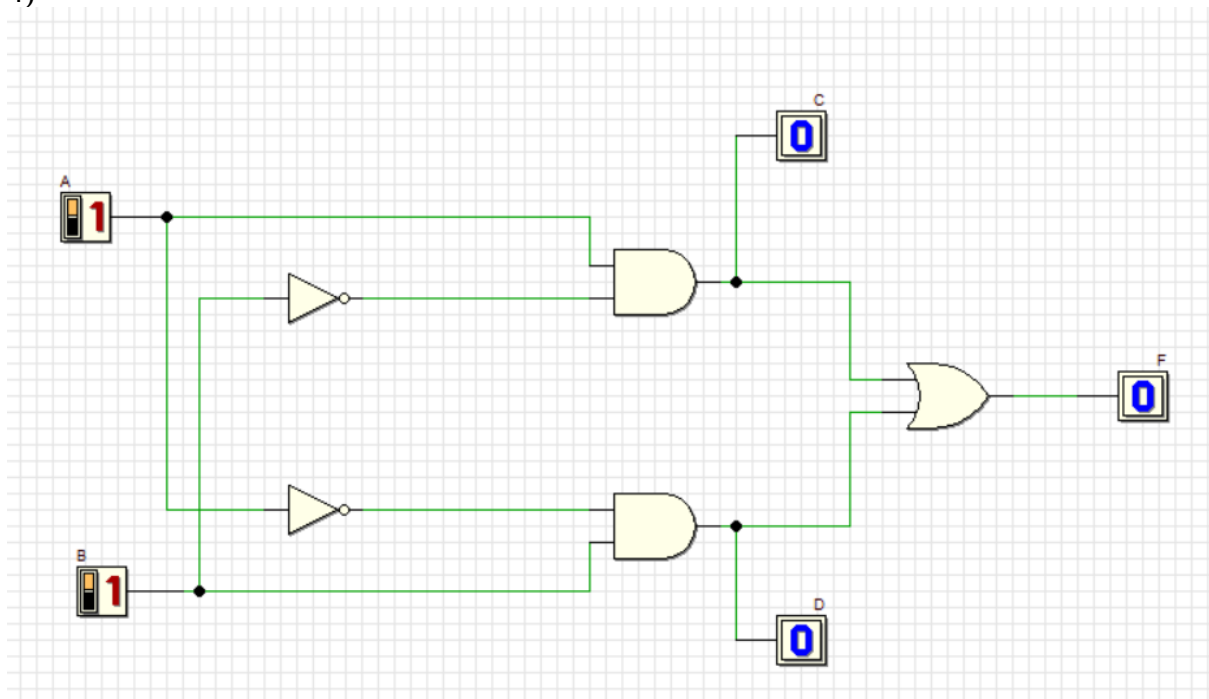
2)



3)



4)



8. What single gate does Circuit 3 represent?

= XOR Gate.