ASSIGNMENT

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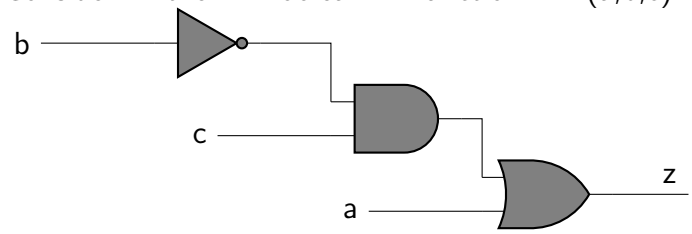
IITH - Future Wireless Communications (FWC)

Contents

1 Question

Consider the Boolean function z(a,b,c)



Which of the following minterm lists represents the circuit given above?

1) $z = \sum(0, 1, 3, 7)$
2) $z = \sum(1, 4, 5, 6, 7)$
3) $z = \sum(2, 4, 5, 6, 7)$
4) $z = \sum(2, 3, 5)$

2 Components

Component	Values	Quantity
Arduino	UNO	1
JumperWires	M-M	6
Breadboard		1
LED		1
Resistor	220ohms	1

Figure.a

3 Truth Table

a	b	c	z
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

Truth table Boolean Function "z"

4 Logical Diagram

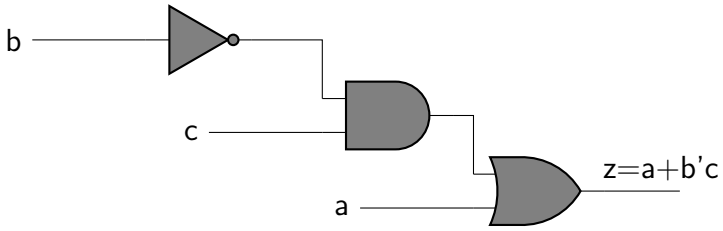


Fig. 1

5 Implementation

Arduino PIN	INPUT	OUTPUT
2	a	
3	b	
4	c	
5		z

Connections

a) Procedure

1. Connect the circuit as per the above table.
2. Connnect the one end of the resistor to anode of LED and cathode of LED to ground.
3. Connect the output pin to another end of resisor.
4. Connect inputs to Vcc for logic 1, ground for logic 0.

5. Execute the circuit using the below code.

https://github.com/BharathMorri/cs282020/blob/main/asg.cpp

6. Change the values of a,b,c in the code and verify
the Truth Table.