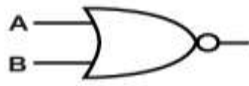


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- 2 (a) Complete the truth table for each of the following two logic gates.



A	B	Output
0	0	
0	1	
1	0	
1	1	



A	B	Output
0	0	
0	1	
1	0	
1	1	

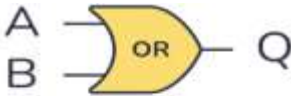
- (b) Draw a logic circuit for the following logic expression.

$$X = \text{NOT}(\text{NOT}(\text{A AND B}) \text{ AND } \text{C})$$

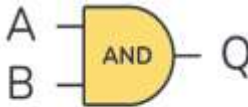


[2]

Solution:



A	B	Q
0	0	0
0	1	1
1	0	1
1	1	1



A	B	Q
0	0	0
0	1	0
1	0	0
1	1	1



A

B

Output

$Y = (A + B)'$

Truth Table

Input A	Input B	$O = (A + B)'$
0	0	1
0	1	0
1	0	0
1	1	0



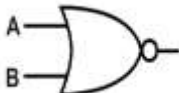
A

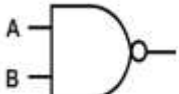
B

$Y = (A.B)'$

Truth Table

Input A	Input B	$Y = (A.B)'$
0	0	1
0	1	1
1	0	1
1	1	0

	A	B	Output
	0	0	1
	0	1	0
	1	0	0
	1	1	0

	A	B	Output
	0	0	1
	0	1	1
	1	0	1
	1	1	0

(b)

$$X = \text{NOT}(\text{NOT}(A \text{ AND } B) \text{ AND } C)$$

Given logical expression has two parts:

NOT(A AND B),

C

Passing through AND Gate

As we have NOT of both expression so we have a circuit as given below:

