

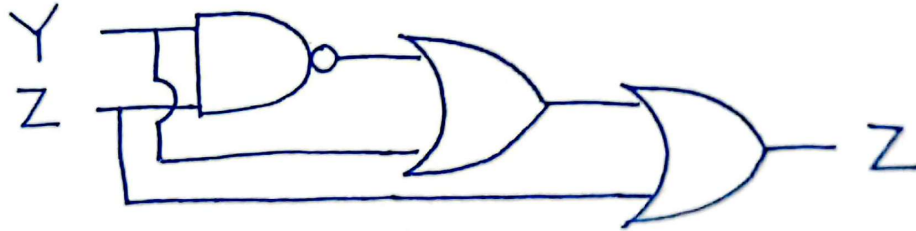
Introduction to Computing
CCC111-18

Marasigan, Vem Aiensi A.
1-BSCS-3

BASIC LOGIC GATES QUIZ

1. $Z = (YZ)' + Y + Z$

a. Logic Circuit Diagram



b. Truth Table

Y	Z	$(YZ)'$	$(YZ)' + Y$	Z
0	0	1	1	1
0	1	1	1	1
1	0	1	1	1
1	1	0	1	1

c. Karnaugh Map

Y \ Z	0	1
0	1	1
1	1	1

d. $Z = (YZ)' + Y + Z$

$= Y' + Z' + Y + Z$

$= (Y' + Y) + (Z' + Z)$

$= 1 + 1$

$Z = 1$

(De Morgan's)

(Commutative)

(Complement)

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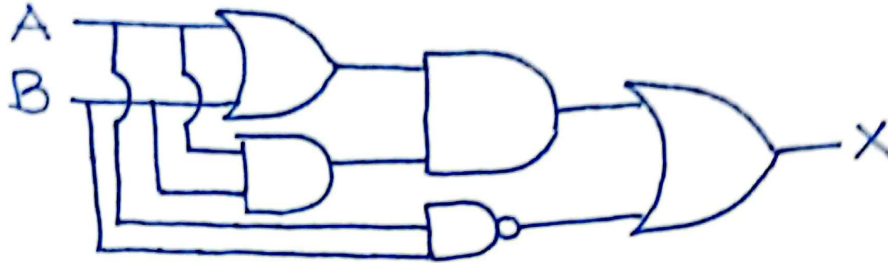
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2. $X = [(A+B)(AB)] + (AB)'$

a. Logic Circuit Diagram



b. Truth Table

A	B	A + B	AB	(A+B)(AB)	(AB)'	X
0	1	1	0	0	1	1
0	0	0	0	0	1	1
1	1	1	1	1	0	1
1	0	1	0	0	1	1

c. Karnaugh Map

B \ A	0	1
0	1	1
1	1	1

d. $X = [(A+B)(AB)] + A'B'$
 $= AB + A'B'$

X = 1

(Absorvative)

(Complement)

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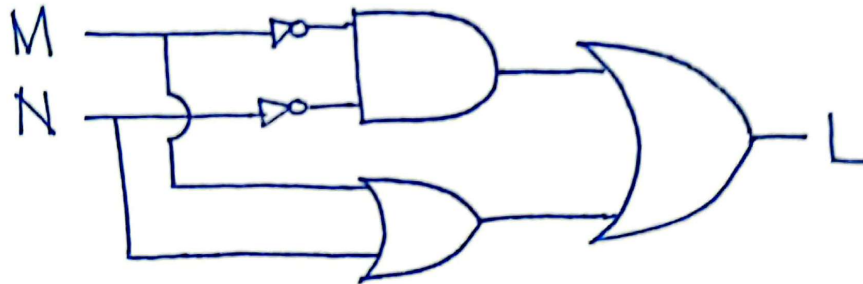
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3. $Z = (Y' \cdot Z') + (M + N)$

a. Logic Circuit Diagram



b. Truth Table

M	N	M'	N'	M' · N'	M + N	L
0	1	1	0	0	1	1
0	0	1	1	1	0	1
1	1	0	0	0	1	1
1	0	0	1	0	1	1

c. Karnaugh Map

N \ M	0	1
0	1	1
1	1	1

d. $L = (M' \cdot N') + (M + N)$
 $= (M + N)' + (M + N)$

L = 1

(De Morgan's)
(Complement)

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