Electrónica digital: Lab #4

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Ej: 1

(1)

Y	AB 00	01	11	10
C 0	(1)	1	0	(1)
1	0	0	(1)	(1)

en este no hacer el wraparound

$Y = \bar{A}\bar{C} + A\bar{B} + AC$

R// $Y = \bar{A}\bar{C} + A\bar{B} + AC$

(2)

Y	AB 00	01	11	10
C 0	1	0	0	X
1	X	0	0	1

$Y = \bar{B}$ R// $Y = \bar{B}$

(3)

Y	AB 00	01	11	10
CD 00	(1)	0	(1)	0
01	0	(1)	0	(1)
11	(1)	0	(1)	0
10	0	(1)	0	(1)

$Y = \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}CD + \bar{A}\bar{B}C\bar{D} + \bar{A}BC\bar{D} + A\bar{B}C\bar{D} + ABCD + A\bar{B}\bar{C}D + A\bar{B}C\bar{D}$

R// $Y = \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}CD + \bar{A}B\bar{C}D + \bar{A}BC\bar{D} + A\bar{B}C\bar{D} + ABCD + A\bar{B}\bar{C}D + A\bar{B}C\bar{D}$

(4)

Y	AB 00	01	11	10
CD 00	X	0	1	1
01	X	X	1	0
11	0	X	1	1
10	X	0	X	X

$Y = A\bar{D} + B\bar{D} + AC$

R// $A\bar{D} + B\bar{D} + AC = Y$

Ej 2

①

A	B	C	D	Y	
0	0	0	0	1	0 + 0 + 1 = 1
0	0	0	1	0	0 + 0 + 0 = 0
0	0	1	0	0	0 + 0 + 0 = 0
0	0	1	1	0	0 + 0 + 0 = 0
0	1	0	0	0	0 + 0 + 0 = 0
0	1	0	1	0	0 + 0 + 0 = 0
0	1	1	0	0	0 + 0 + 0 = 0
0	1	1	1	0	0 + 0 + 0 = 0
1	0	0	0	1	0 + 1 + 0 = 1
1	0	0	1	1	0 + 1 + 0 = 1
1	0	1	0	1	0 + 1 + 0 = 1
1	0	1	1	1	0 + 1 + 0 = 1
1	1	0	0	1	0 + 1 + 0 = 1
1	1	0	1	1	0 + 1 + 0 = 1
1	1	1	0	1	1 + 1 + 0 = 1
1	1	1	1	0	0 + 0 + 0 = 0

Y CD \ AB	00	01	11	10
00	1	0	1	1
01	0	0	1	1
11	0	0	0	1
10	0	0	1	1

$Y = \bar{B}C\bar{D} + A\bar{C} + A\bar{B} + A\bar{D}$

R// $Y = \bar{B}C\bar{D} + A(\bar{B} + \bar{C} + \bar{D}) = \bar{B}C\bar{D} + A\overline{(BCD)}$

②

A	B	C	X
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

0 + 1 + 0
0 + 1 + 0
0 + 0 + 0
1 + 1 + 1
0 + 1 + 0
0 + 1 + 0
0 + 0 + 0
0 + 1 + 1

Y

AB \ C	00	01	11	10
0	1	0	0	1
1	1	1	1	1

$Y = C + \bar{B}$ A → X

R// $Y = C + \bar{B}$

③

A	B	C	D	Y
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	0
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

0 + 0 + 0 =
1 + 0 + 0 =
0 + 0 + 0 =
0 + 0 + 0 =
0 + 0 + 1 =
0 + 0 + 1 =
0 + 0 + 1 =
0 + 0 + 1 =
0 + 0 + 0 =
0 + 1 + 0 =
0 + 0 + 0 =
0 + 1 + 0
0 + 0 + 1 =
0 + 1 + 1 =
0 + 0 + 1
0 + 1 + 1

CD \ AB	00	01	11	10
00	0	1	1	0
01	1	1	1	1
11	0	1	1	1
10	0	1	1	0

$Y = B + (\bar{B}C\bar{D} + A\bar{B}D)$

$Y = B + D(\bar{C} + A)$

R// $Y = B + D(A + \bar{C})$

0 0(0 + 1)
0 + 0(1)
0

④

A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

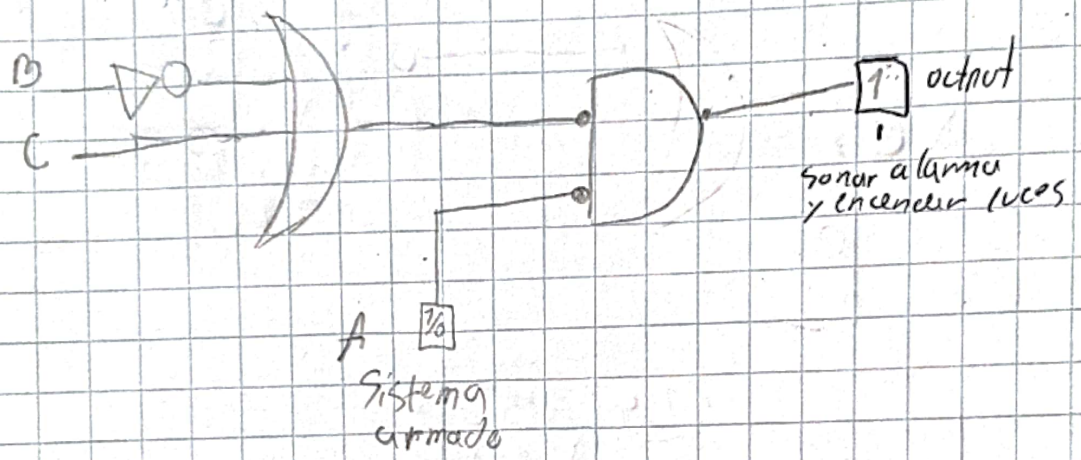
0 + 1 + 0
0 + 0 + 0
0 + 0 + 1
1 + 0 + 0
0 + 0 + 0
0 + 0 + 0
0 + 0 + 1
1 + 0 + 0

C \ AB	00	01	11	10
0	1	1	1	0
1	0	1	1	0

$Y = \bar{A}\bar{C} + B$

R// $Y = \bar{A}\bar{C} + B$

8.5



$Y = A \cdot (\bar{B} + C)$ 0.G

$Y = A\bar{B}C + A\bar{B}C + ABC$ S.OP

~~$Y = (A+B+C)$~~

$Y = (A+B+C) \cdot (A+B+\bar{C}) \cdot (A+\bar{B}+C) \cdot (A+\bar{B}+\bar{C}) \cdot (\bar{A}+\bar{B}+C)$ POS

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

Y	AB: 00	01	11	10
C: 0	0	0	0	1
1	0	0	1	1

$Y = A\bar{B} + AC$ reducido