

Soluciones

PROBLEMA 1)

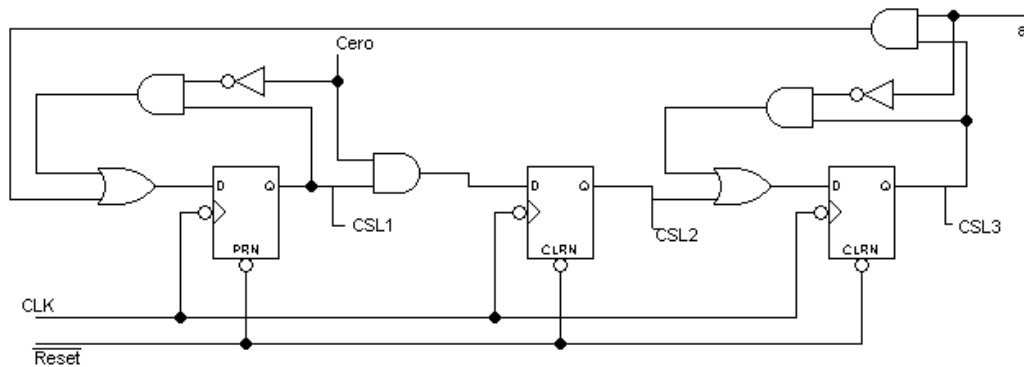
MODULE: EXAMEN2
 INPUT: Din[7..0], DIRin[7..0], WEin\
 CERO
 OUTPUT: WE\
 DIR[7..0], D[7..0],
 BUSY
 MEMORY: INI[7..0], FIN[7..0],

1- WE\
 DIR = DIRin
 D = Din
 BUSY = CERO
 INI \leftarrow Din
 \rightarrow (CERO, !CERO) / (2,1)

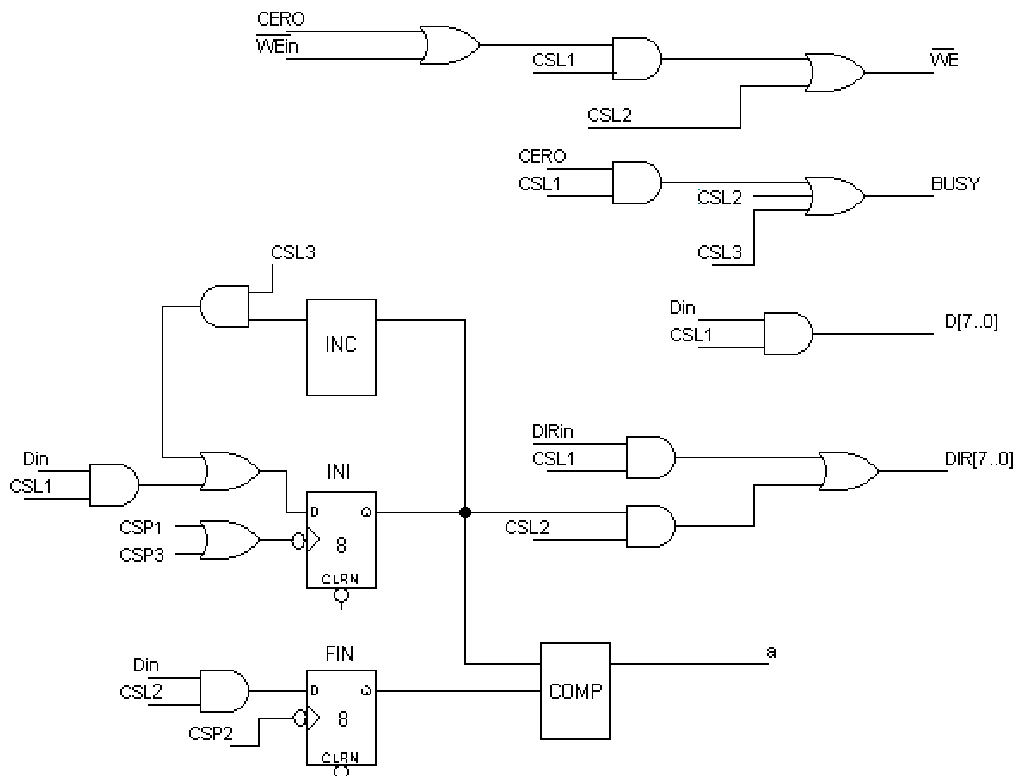
2- FIN \leftarrow Din
 BUSY = 1
 WE\
 WE\
 WE\
 BUSY = 1
 D = 0h
 DIR = INI
 INI \leftarrow INC (INI)
 (INI = FIN, INI \leq FIN) / (1,3)

END SEQUENCE
 CONTROL RESET (1)
 END

BLOQUE DE CONTROL



BLOQUE DE DATOS



PROBLEMA 2

DIAGRAMA DE ESTADOS

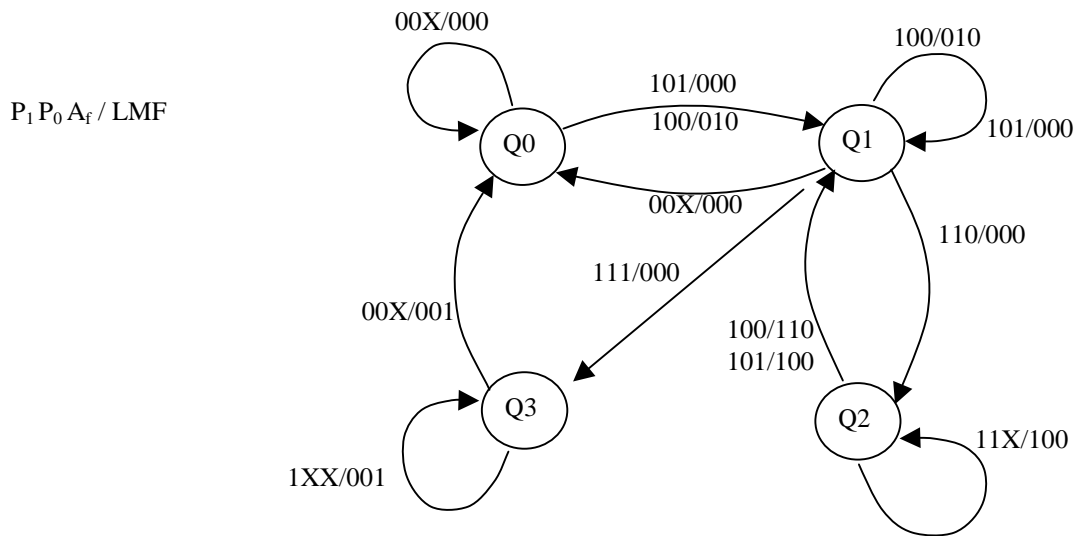


TABLA DE ESTADOS

	Próximo estado								Salidas							
	000	001	011	010	100	101	111	110	110	110	110	110	110	110	110	110
Q0	Q0	Q0	X	X	Q1	Q1	X	X	000	000	X	X	010	000	X	X
Q1	Q0	Q0	X	X	Q1	Q1	Q3	Q2	000	000	X	X	010	000	000	000
Q2	X	X	X	X	Q1	Q1	Q2	Q2	X	X	X	X	110	100	100	100
Q3	Q0	Q0	X	X	Q3	Q3	Q3	Q3	001	001	X	X	001	001	001	001

Q0 es equivalente a Q1.

Codificación:

$Q0, Q1 \rightarrow 00$

$Q2 \rightarrow 01$

$Q3 \rightarrow 11$

$Y_1 Y_0 \backslash P_0 A_f$	$P_1=0$				$P_1=1$			
	00	01	11	10	00	01	11	10
00	0	0	X	X	0	0	1	0
01	X	X	X	X	0	0	0	0
11	0	0	X	X	1	1	1	1
10	X	X	X	X	X	X	X	X

$$D1 = Y_1 \cdot P_1 + !Y_0 \cdot P_0 \cdot A_f$$

$Y_1 Y_0 \backslash P_0 A_f$	$P_1=0$				$P_1=1$			
	00	01	11	10	00	01	11	10
00	0	0	X	X	0	0	1	1
01	X	X	X	X	0	0	1	1
11	0	0	X	X	1	1	1	1
10	X	X	X	X	X	X	X	X

$$D0 = P_0 + Y_1 \cdot P_1$$

$Y_1 Y_0 \backslash P_0 A_f$	$P_1=0$				$P_1=1$			
	00	01	11	10	00	01	11	10
00	0	0	X	X	1	0	0	0
01	X	X	X	X	1	0	0	0
11	0	0	X	X	0	0	0	0
10	X	X	X	X	X	X	X	X

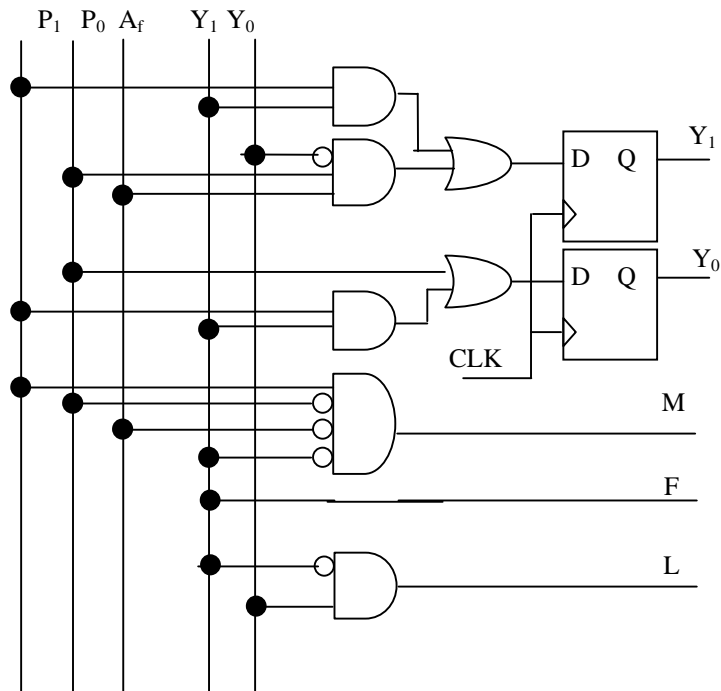
$$M = !Y_1 \cdot P_1 \cdot !P_0 \cdot !A_f$$

$Y_1 Y_0 \backslash P_0 A_f$	$P_1=0$				$P_1=1$			
	00	01	11	10	00	01	11	10
00	0	0	X	X	0	0	0	0
01	X	X	X	X	0	0	0	0
11	1	1	X	X	1	1	1	1
10	X	X	X	X	X	X	X	X

$$F = Y_1$$

$Y_1 Y_0 \backslash P_0 A_f$	$P_1=0$				$P_1=1$			
	00	01	11	10	00	01	11	10
00	0	0	X	X	0	0	0	0
01	X	X	X	X	1	1	1	1
11	0	0	X	X	0	0	0	0
10	X	X	X	X	X	X	X	X

$$L = !Y_1 \cdot Y_0$$



Ejercicio 1

$$y1 = A + y1y0$$

$$y0 = B + /y1y0 + y0/A$$

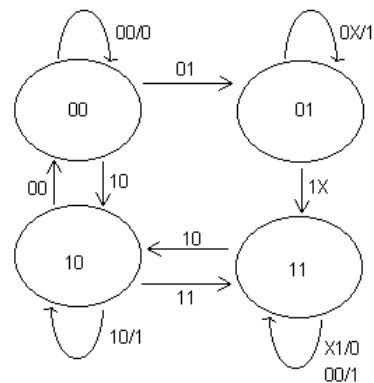
$$z = /y1y0 + /By0 + A/B$$

y1y0\AB	00	01	11	10
00	0	0	1	1
01	0	0	1	1
11	1	1	1	1
10	0	0	1	1

y1y0\AB	00	01	11	10
00	0	1	1	0
01	1	1	1	1
11	1	1	1	0
10	0	1	1	0

y1y0\AB	00	01	11	10
00	0	0	0	1
01	1	1	1	1
11	1	0	0	1
10	0	0	0	1

y1y0\AB	00	01	11	10	00	01	11	10
00	00	01	11	10	0	0	0	1
01	01	01	11	11	1	1	1	1
11	11	11	11	10	1	0	0	1
10	00	01	11	10	0	0	0	1



No hay carreras.

Ejercicio 2

$$A+B=221,92d + 12,394d = 234,314d$$

a)

$$A = 1,10\ 1110\ 1111 \cdot 2^7 \rightarrow s=0, f= 10\ 1110\ 1111, e= 10110$$

$$B = 1,10\ 0011\ 0010 \cdot 2^3 \rightarrow s=0, f= 10\ 0011\ 0010, e= 10010$$

$$A+B= 1,11\ 0101\ 0010 \cdot 2^7 = 234,25d$$

b)

$$A = 0\ 1101\ 1101, 1110\ 1011$$

$$B = 0\ 0000\ 1100, 0110\ 0100$$

$$A+B = 0\ 1110\ 1010, 0100\ 1111 = 234,3086$$

Mayor error utilizando P.Flotante