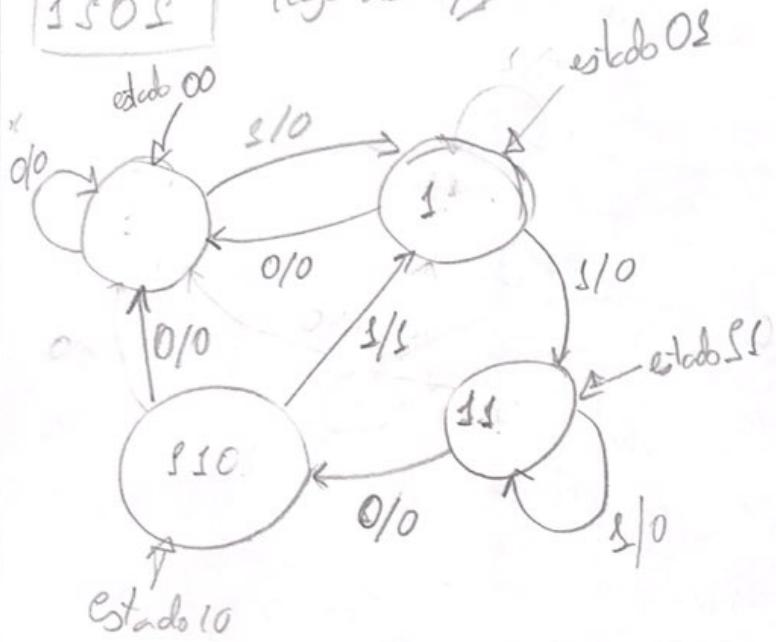
Mealy's model

1501	legenda x/y



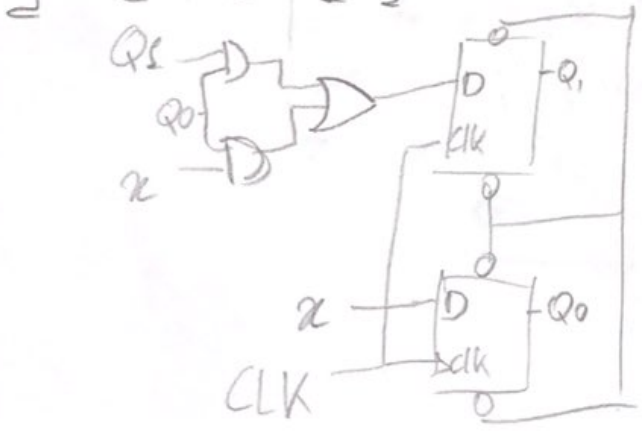
Q_1	Q_0	x	Q_1^+	Q_0^+	y
0	0	0	0	0	0
		1	0	1	0
0	1	0	0	0	0
		1	1	1	0
1	0	0	0	0	0
		1	0	1	1
1	1	0	1	0	0
		1	1	1	0

$y = Q_1 + \overline{Q_0} \cdot x$

$Q_0^+ = x$

$Q_1^+ = Q_1 Q_0 + x Q_0$

Q_1Q_0 / x	00	01	11	10
0	0	0	1	0
1	0	1	1	0

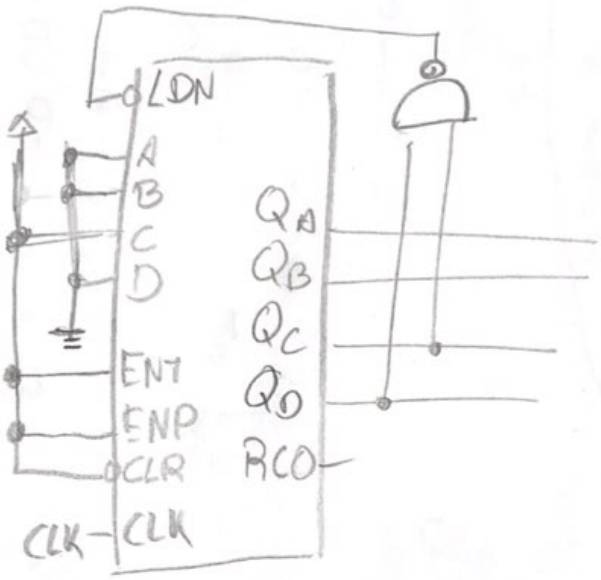


74163
74194

⑤

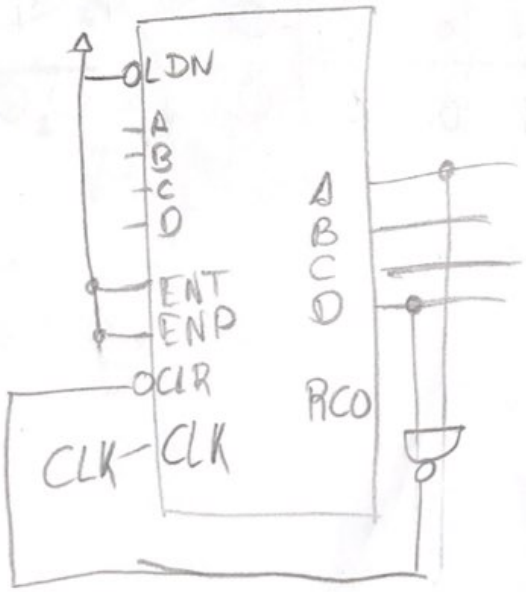
O circuito tem de ter load de 4 e parar no 12

0100
0101
0110
0111
1000
1001
1010
1011
1100



⑥

0000
0001
0010
0011
0100
0101
0110
0111
1000
1001



(4)

Q_2	Q_1	Q_0	Q_2^+	Q_1^+	Q_0^+
0	0	0	0	0	1
0	0	1	0	1	1
0	1	0	1	1	0
0	1	1	0	1	0
1	0	0	0	0	0
1	0	1	1	0	0
1	1	0	1	1	1
1	1	1	1	0	1

Q_0 \ Q_2Q_1	00	01	11	10
0	0	1	1	0
1	0	0	1	1

$Q_2^+ = \overline{Q_0}\, Q_1 + Q_2 Q_0$

Q_0 \ Q_2Q_1	00	01	11	10
0	0	1	1	0
1	1	1	0	0

$Q_1^+ = Q_1 * \overline{Q_0} + Q_0 * \overline{Q_2}$

Q_0 \ Q_2Q_1	00	01	11	10
0	1	0	1	0
1	1	0	1	0

$Q_0^+ = \overline{Q_2}\,\overline{Q_1} + Q_2\,\overline{Q_1} = \overline{Q_2 \oplus Q_1}$

(7)

74163

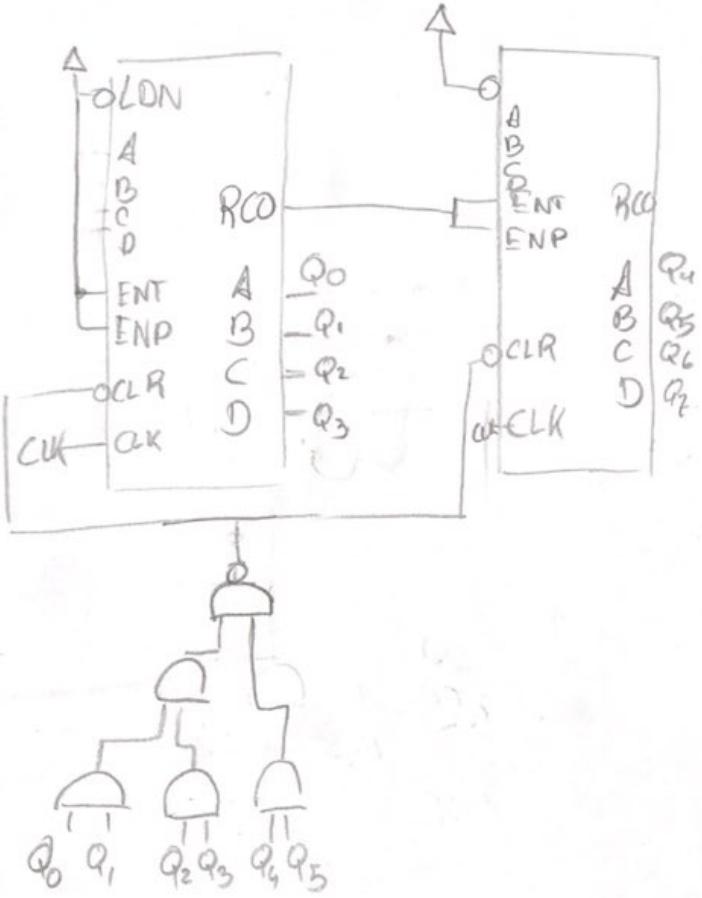
mod - 64 → 0 ... 63

111111_2 ← máx

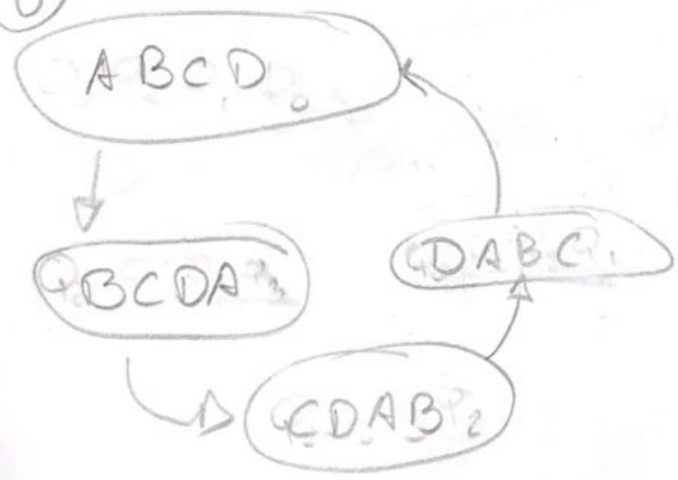
$10_{\times 2} + 20_{\times 2} + 3_{\times 5} =$

$= 20 + 40 + 15 = 75\ ms$

$f = \frac{1000}{75} \approx 13.4\ MHz$

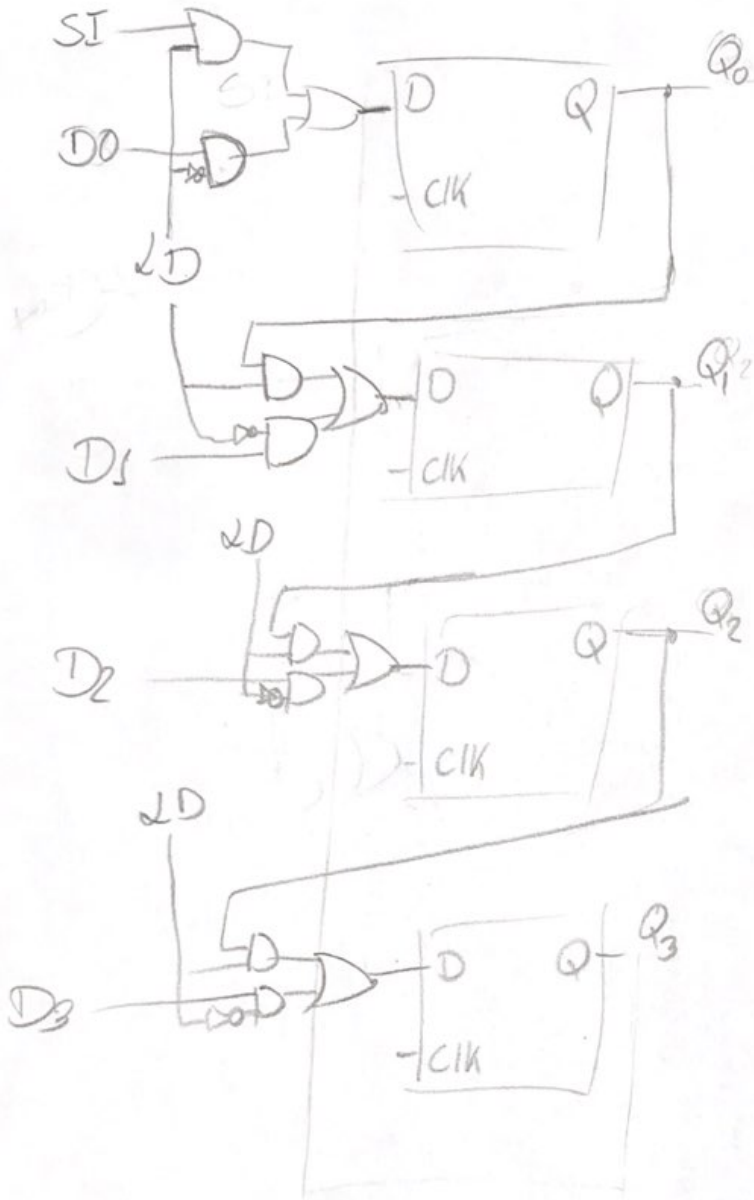


(8)



8

a)



b)