

①

4LFT81 Pănuș Andrei Lecții

Subiectul 11.

$$F(A, B, C, D) =$$

| A | B | C | D | $F(A, B, C, D)$ |
|---|---|---|---|-----------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

| AB \ CD | \overline{CD} | | | |
|-------------------------------|-----------------|----|----|----|
| | 00 | 01 | 11 | 10 |
| $\overline{A}\overline{B}$ 00 | 1 | 0 | 0 | 0 |
| $\overline{A}B$ 01 | 1 | 1 | 0 | 0 |
| AB 11 | 1 | 1 | 1 | 1 |
| $A\overline{B}$ 10 | 1 | 1 | 0 | 1 |

$$F(A, B, C, D) = \overline{A}\overline{B} + \overline{A}B\overline{C} + AB + A\overline{B}\overline{C} + A\overline{B}D + AC\overline{D} + B\overline{C}D + A\overline{C}D$$

$$F(A, B, C, D) = \sum_{i=0}^{15} (0, 4, 5, 8, 9, 10, 12, 13, 14, 15)$$

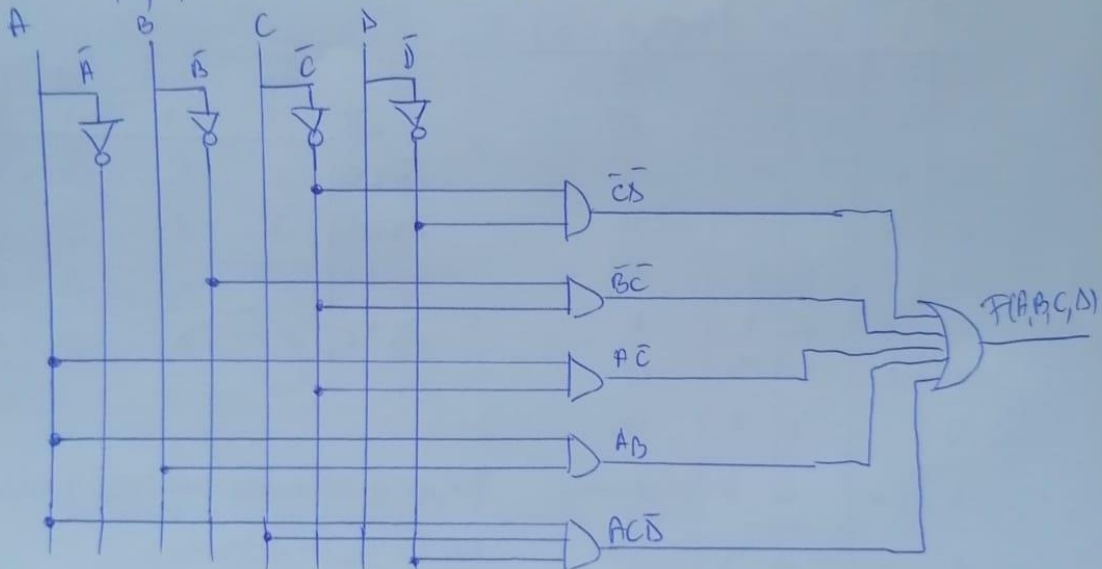
(2)

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Subiectul T2

forma minimizată fără hazard static

$$F(A,B,C,D) = \bar{C}\bar{D} + \bar{B}\bar{C} + A\bar{C} + AB + AC\bar{D}$$

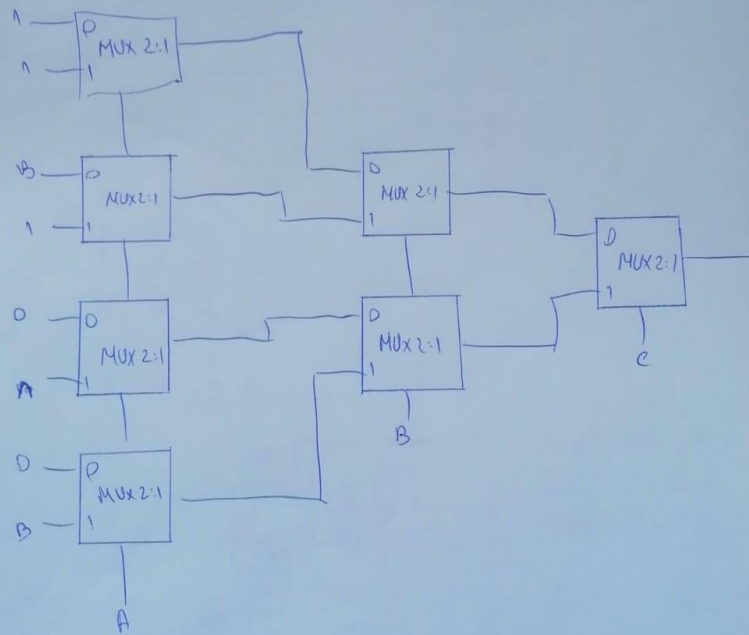


③

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Subiectul 13

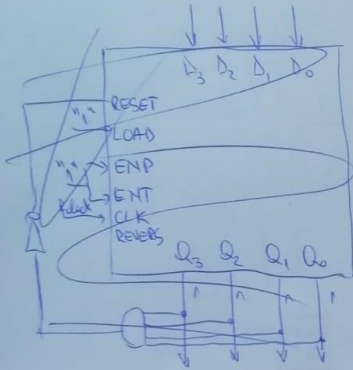
| | $\bar{C}D$ | $\bar{C}\bar{D}$ | CD | $C\bar{D}$ |
|-----------|------------|------------------|------|------------|
| \bar{A} | 0 | 1 | 0 | 0 |
| A | 1 | 1 | 0 | 1 |



④

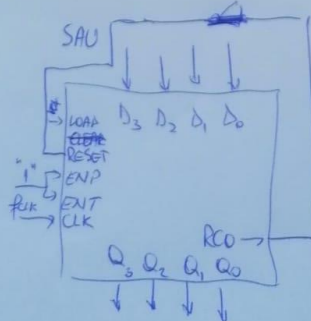
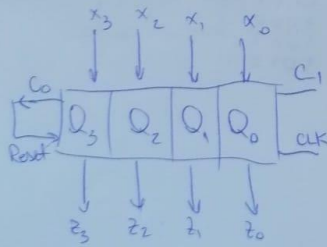
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Subiectul II.1.



| $Q_3 Q_2 Q_1 Q_0$ |
|-------------------|
| 0 0 0 0 |
| 0 0 0 1 |
| 0 0 1 0 |
| 0 0 1 1 |
| 0 1 0 0 |
| 0 1 0 1 |
| 0 1 1 0 |
| 0 1 1 1 |
| 1 0 0 0 |
| 1 0 0 1 |
| 1 0 1 0 |
| 1 0 1 1 |
| 1 1 0 0 |
| 1 1 0 1 |
| 1 1 1 0 |
| 1 1 1 1 |

RESET

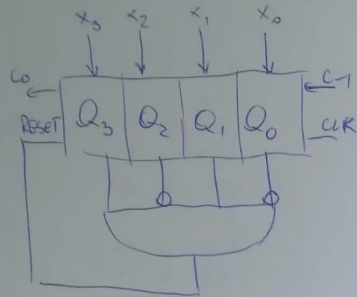


Reset activ pe 1
RCO activ când
 $Q_3 Q_2 Q_1 Q_0 = 1111$

5

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Subiectul 2



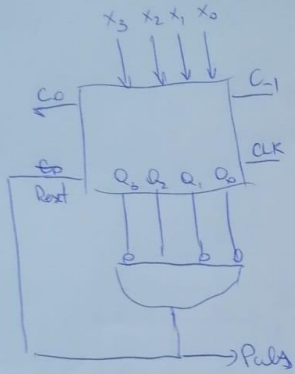
$$x_3 x_2 x_1 x_0 = 0001$$

0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010

⑥

4LFA
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Subiectul 113

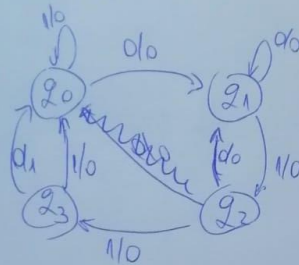


$x_3 x_2 x_1 x_0 = 0001$
store initiali = 0000

| $q_3 q_2 q_1 q_0$ | |
|-------------------|-------|
| 0000 | RESET |
| 0001 | |
| 0010 | |
| 0011 | |
| 0100 | |
| 0101 | |
| 0110 | |
| 0111 | |
| 1000 | |
| 1001 | |
| 1010 | |
| 1011 | |



Subiectul III.1.



~~stare~~ prezent

Subiectul III.2

| cod sub. | Intrare x | stare precedenta | | | stare următoare | | | Iesire y | V _{T1} | V _{T0} |
|-------------|--------------|------------------|--------------------|--------------------|-----------------|----------------------|----------------------|-------------|-----------------|-----------------|
| | | q(t) | z ₁ (t) | z ₀ (t) | q(t+1) | z ₁ (t+1) | z ₀ (t+1) | | | |
| (0) | 0 | | | | q ₀ | 0 | 0 | 0 | 0 | 0 |
| (1) | 1 | q ₀ | 0 | 0 | q ₁ | 0 | 1 | 0 | 0 | 1 |
| (2) | 0 | q ₁ | | | q ₁ | 0 | 1 | 0 | 0 | 0 |
| (3) | 1 | q ₁ | 0 | 1 | q ₂ | 1 | 0 | 0 | 1 | 1 |
| (4) | 0 | q ₂ | | | q ₀ | 0 | 1 | 0 | 1 | 1 |
| (5) | 1 | q ₂ | 1 | 0 | q ₃ | 1 | 1 | 0 | 0 | 1 |
| (6) | 0 | q ₃ | | | q ₀ | 0 | 0 | 1 | 1 | 1 |
| (7) | 1 | q ₃ | 1 | 1 | q ₀ | 0 | 0 | 0 | 1 | 1 |

8)

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Subiectul 143

bistabilul T.

| $z(t)$ | $z(t+1)$ | T |
|--------|----------|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

valorile sunt trecute în tabelul de la subiectul 142

| | | z_0 | | | |
|-----------|-----|-----------------------|-----------------|-----------------|-----------|
| | | $\bar{z}_0 \bar{z}_1$ | $\bar{z}_0 z_1$ | $z_0 \bar{z}_1$ | $z_0 z_1$ |
| \bar{x} | x | 0 | 0 | 1 | 0 |
| \bar{x} | x | 0 | 1 | 0 | 1 |

| | | z_0 | | | |
|-----------|-----|-----------------------|-----------------|-----------------|-----------|
| | | $\bar{z}_0 \bar{z}_1$ | $\bar{z}_0 z_1$ | $z_0 \bar{z}_1$ | $z_0 z_1$ |
| \bar{x} | x | 0 | 0 | 1 | 1 |
| \bar{x} | x | 1 | 1 | 0 | 0 |

$$W_{T_1} = x z_0 + z_1 z_0 + \bar{x} z_1$$

$$W_{T_0} = z_1 + x$$

| | | z_0 | | | |
|-----------|-----|-----------------------|-----------------|-----------------|-----------|
| | | $\bar{z}_0 \bar{z}_1$ | $\bar{z}_0 z_1$ | $z_0 \bar{z}_1$ | $z_0 z_1$ |
| \bar{x} | x | 0 | 0 | 1 | 0 |
| \bar{x} | x | 0 | 1 | 0 | 1 |

$$W = \bar{x} z_1 z_0$$

9

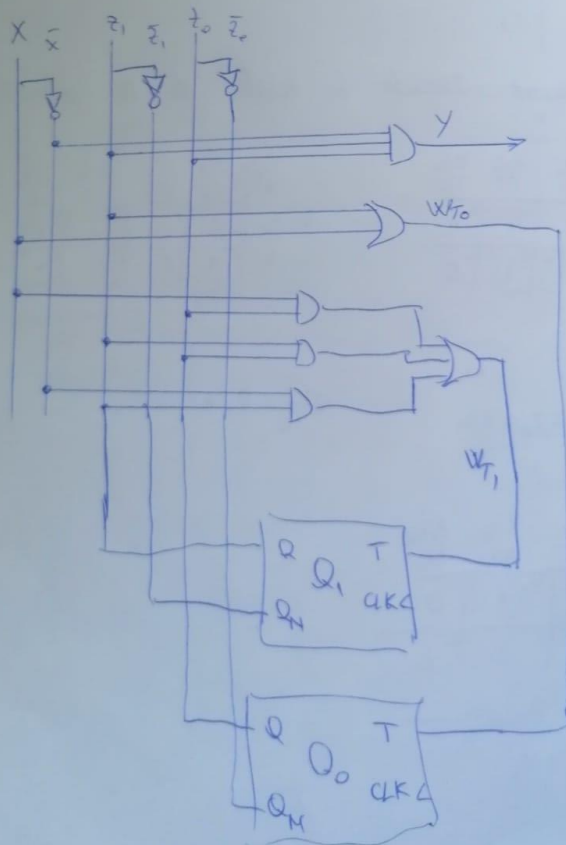
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Subiectul III 4.

$$W_{T_1} = xz_0 + z_1z_0 + \bar{x}z_1$$

$$W_{T_0} = z_1 + x$$

$$y = \bar{x}z_1z_0$$



10

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Subiectul 10 5

