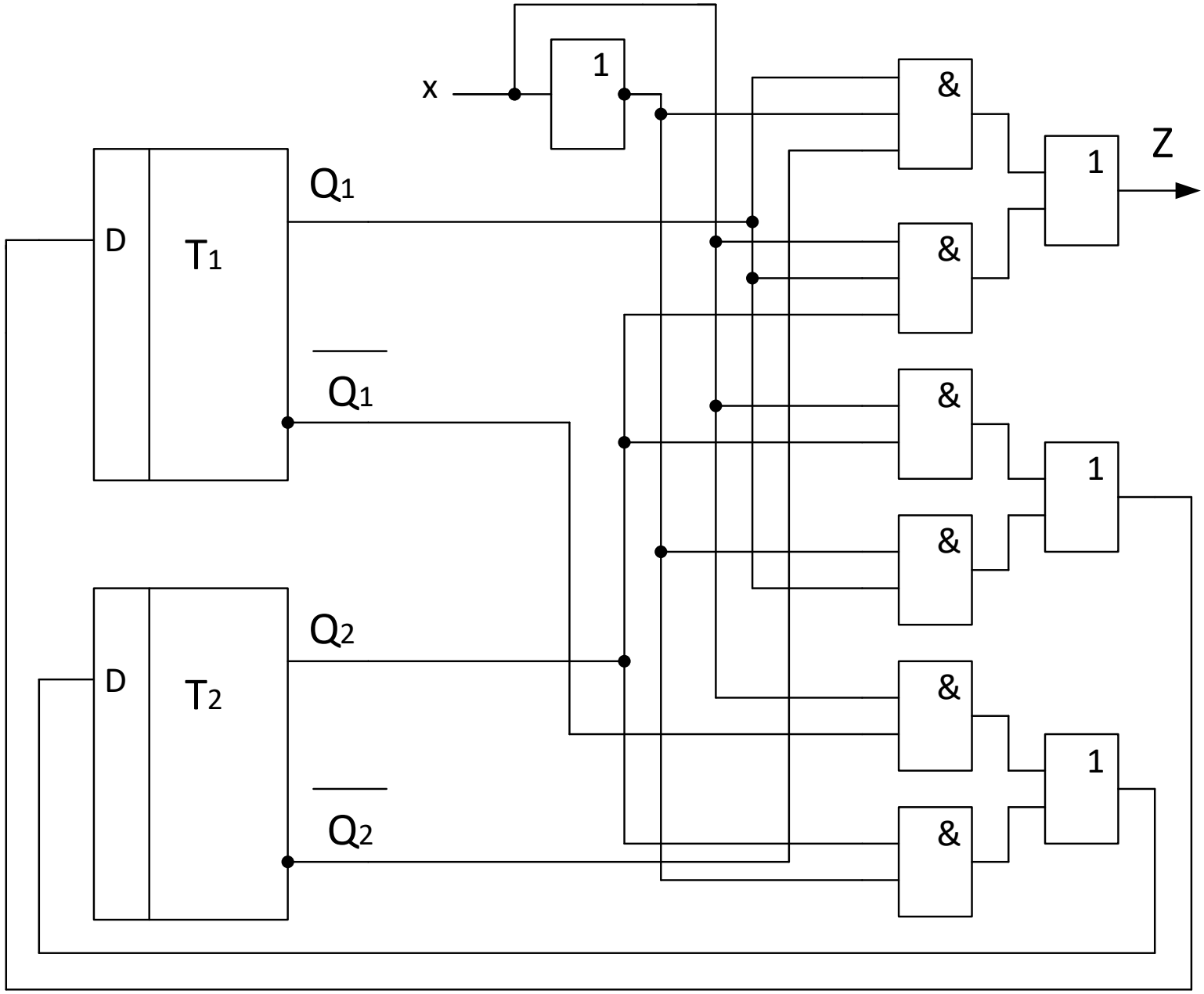
1. Да се построи време диаграмата за схемата при зададени начално вътрешно състояние 00 и входна последователност 0-1-0-1-0-1-0-1.



Решение:

1. Определяне на функциите:

$$D_1 = x.Q_2 \vee \bar{x}.Q_1$$
$$D_2 = x.\bar{Q}_1 \vee \bar{x}.Q_2$$
$$Z = \bar{x}.Q_1.\bar{Q}_2 \vee x.Q_1.Q_2$$

2. Локализация:

$$D_1 = x.Q_2 \vee \bar{x}.Q_1$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		Q_2		

$$D_1 =$$

Решение:

1. Определяне на функциите:

$D_1 = x.Q_2 \vee \bar{x}.Q_1$

$D_2 = x.\bar{Q}_1 \vee \bar{x}.Q_2$

$Z = \bar{x}.Q_1.\bar{Q}_2 \vee x.Q_1.Q_2$

2. Локализация:

$$D_1 = x.Q_2 \vee \bar{x}.Q_1$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		1	1	1
		1		
		Q_2		

$$D_1 = \vee\,(2, 3, 5, 7)^1$$

$$D_2 = x.\bar{Q}_1 \vee \bar{x}.Q_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		Q_2		

$D_2 =$

$$Z = \bar{x}.Q_1.\bar{Q}_2 \vee x.Q_1.Q_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		Q_2		

$Z =$

$$D_2 = x.\bar{Q}_1 \vee \bar{x}.Q_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
			1	
	1	1	1	
		Q_2		

$$D_2 = \vee\,(1, 3, 4, 5)^1$$

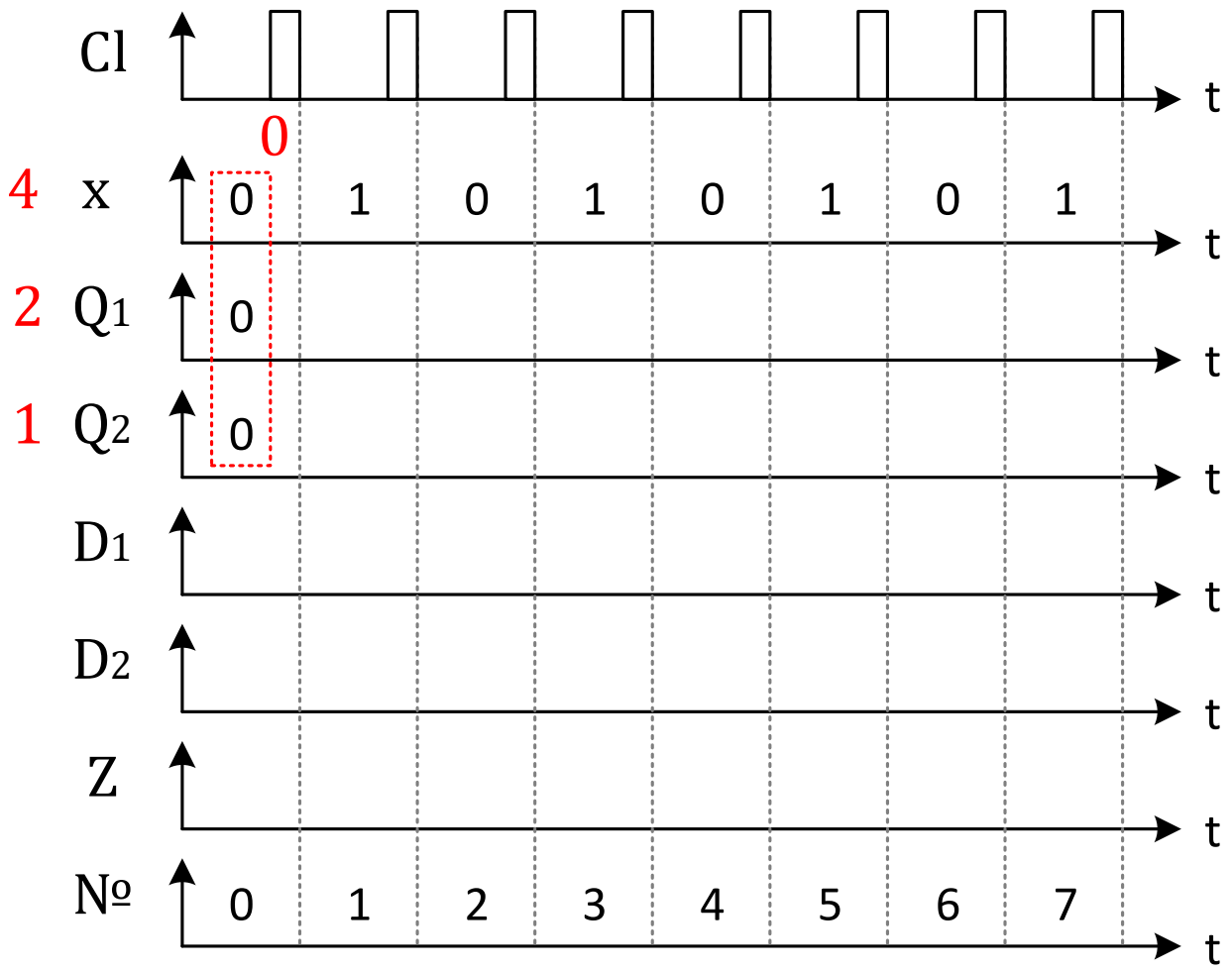
$$Z = \bar{x}.Q_1.\bar{Q}_2 \vee x.Q_1.Q_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		1		1
		Q_2		

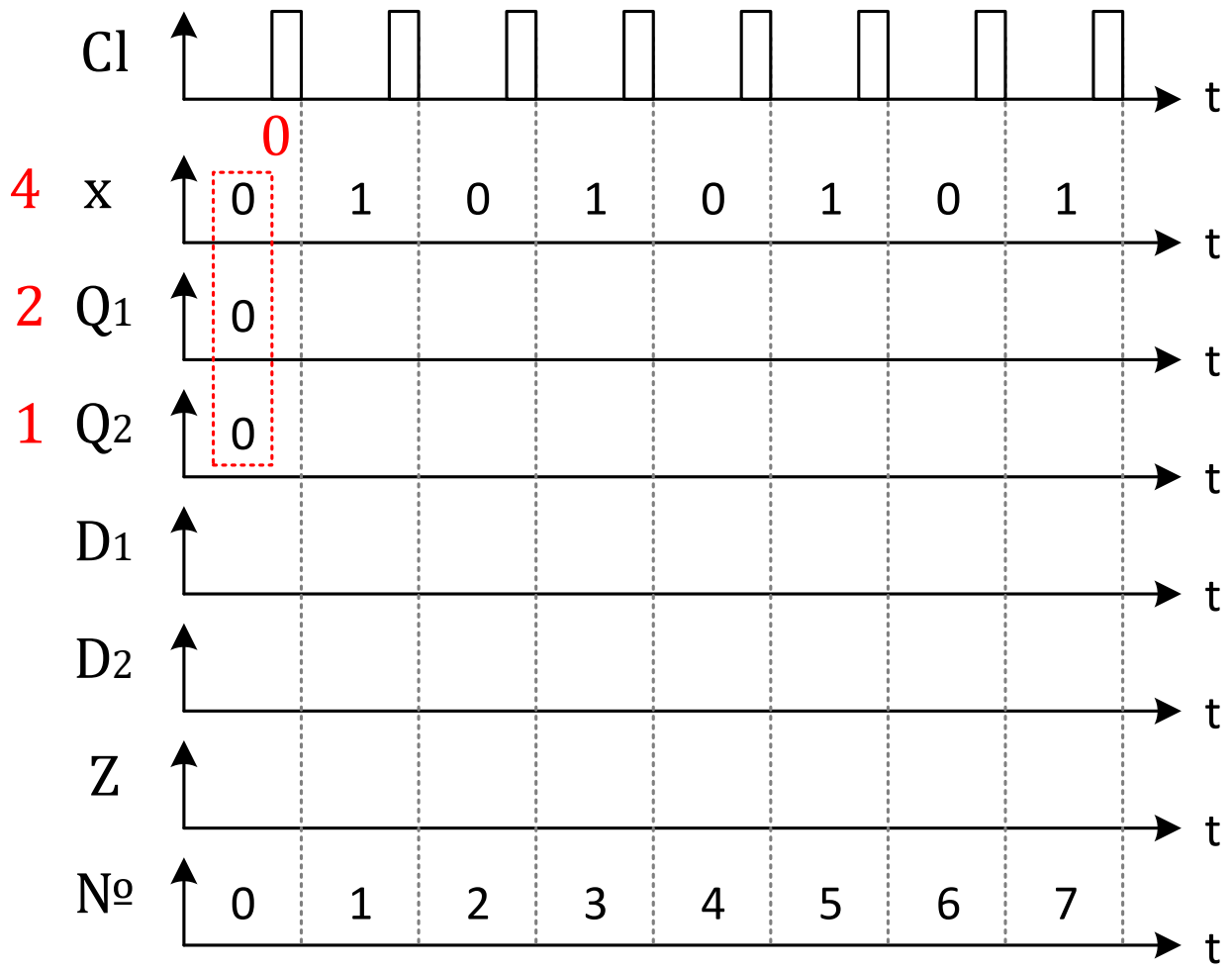
$$Z = \vee\,(2, 7)^1$$

3. Построяване на време-диаграмата.

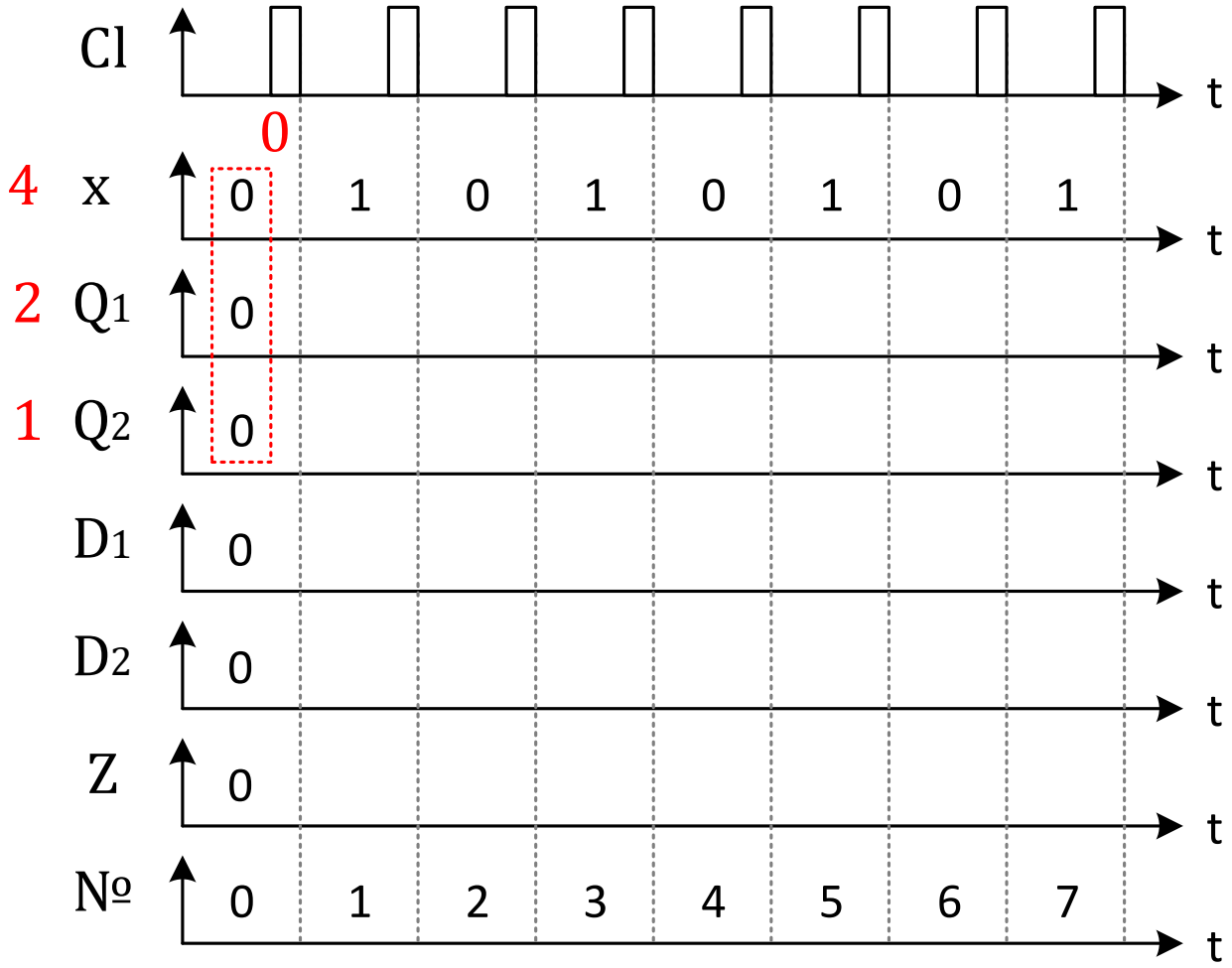


D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1

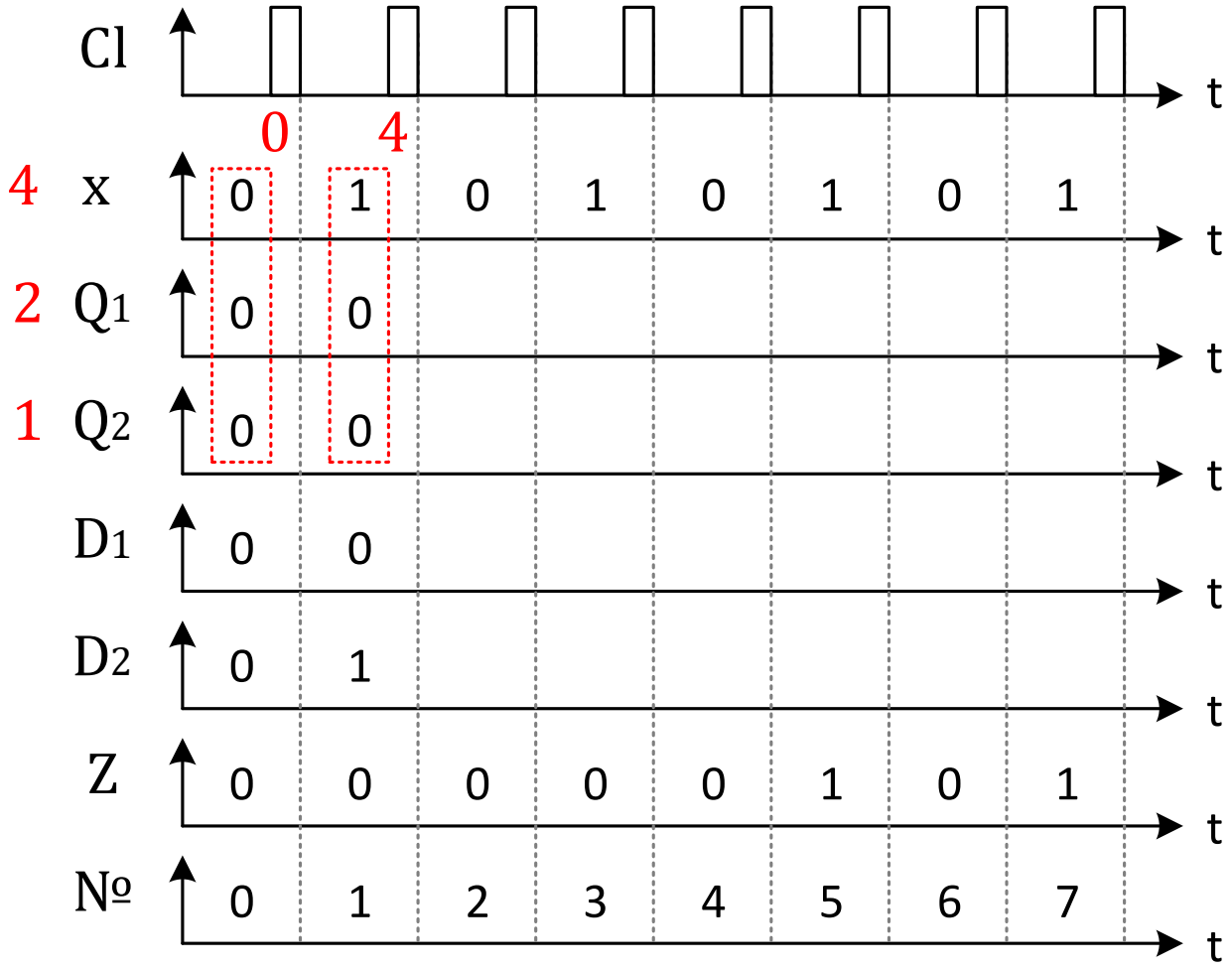
4. Построяване на време-диаграмата.



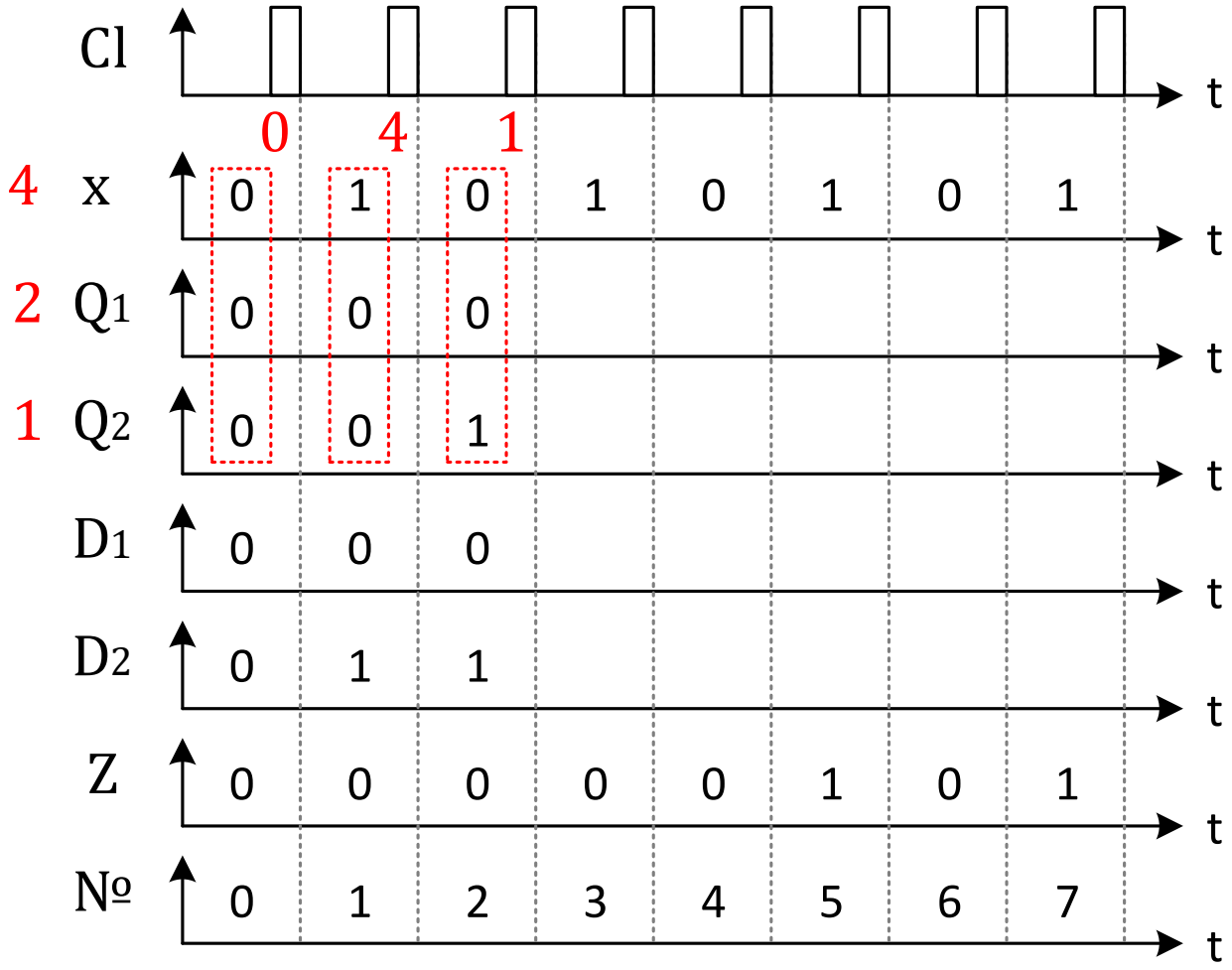
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



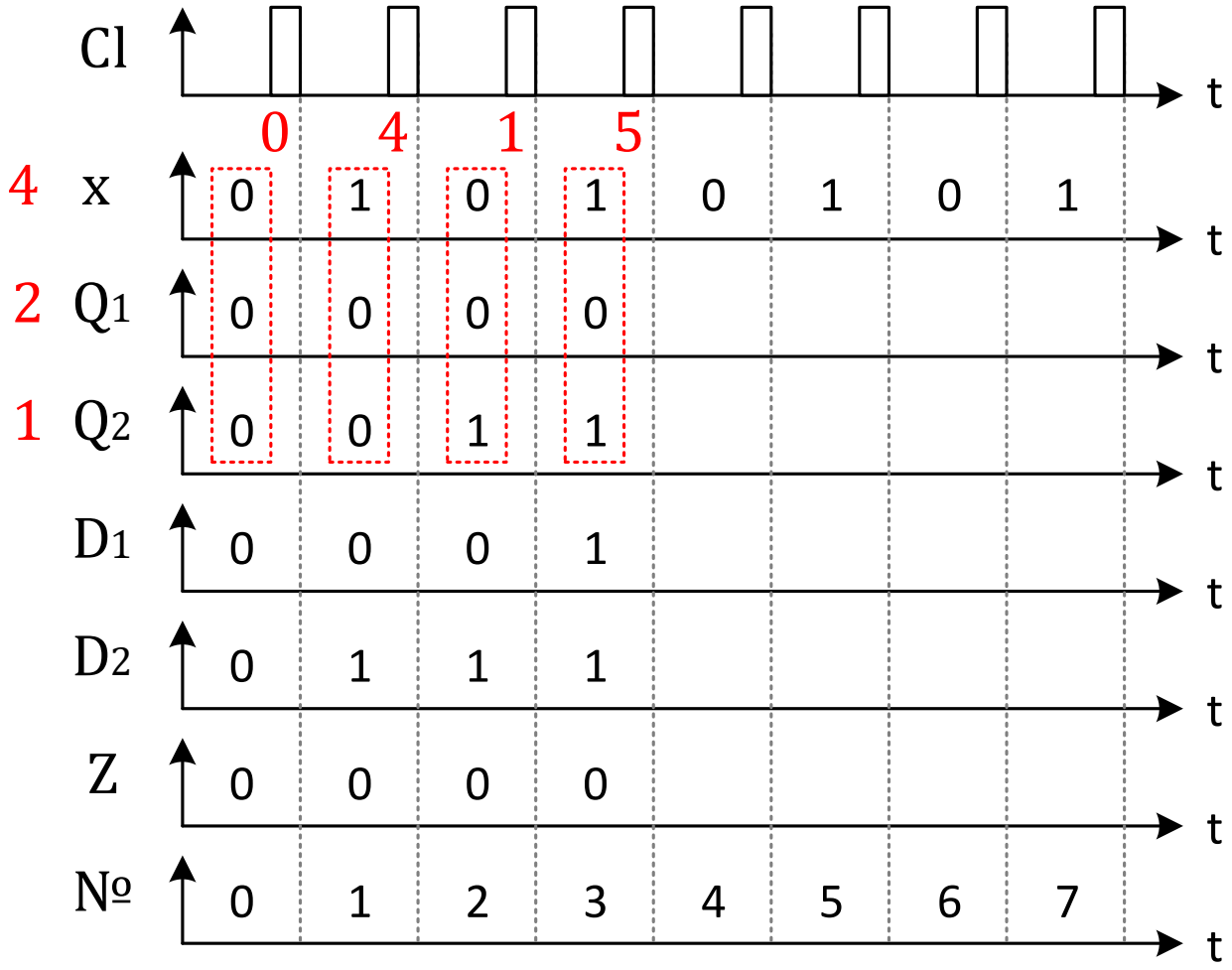
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



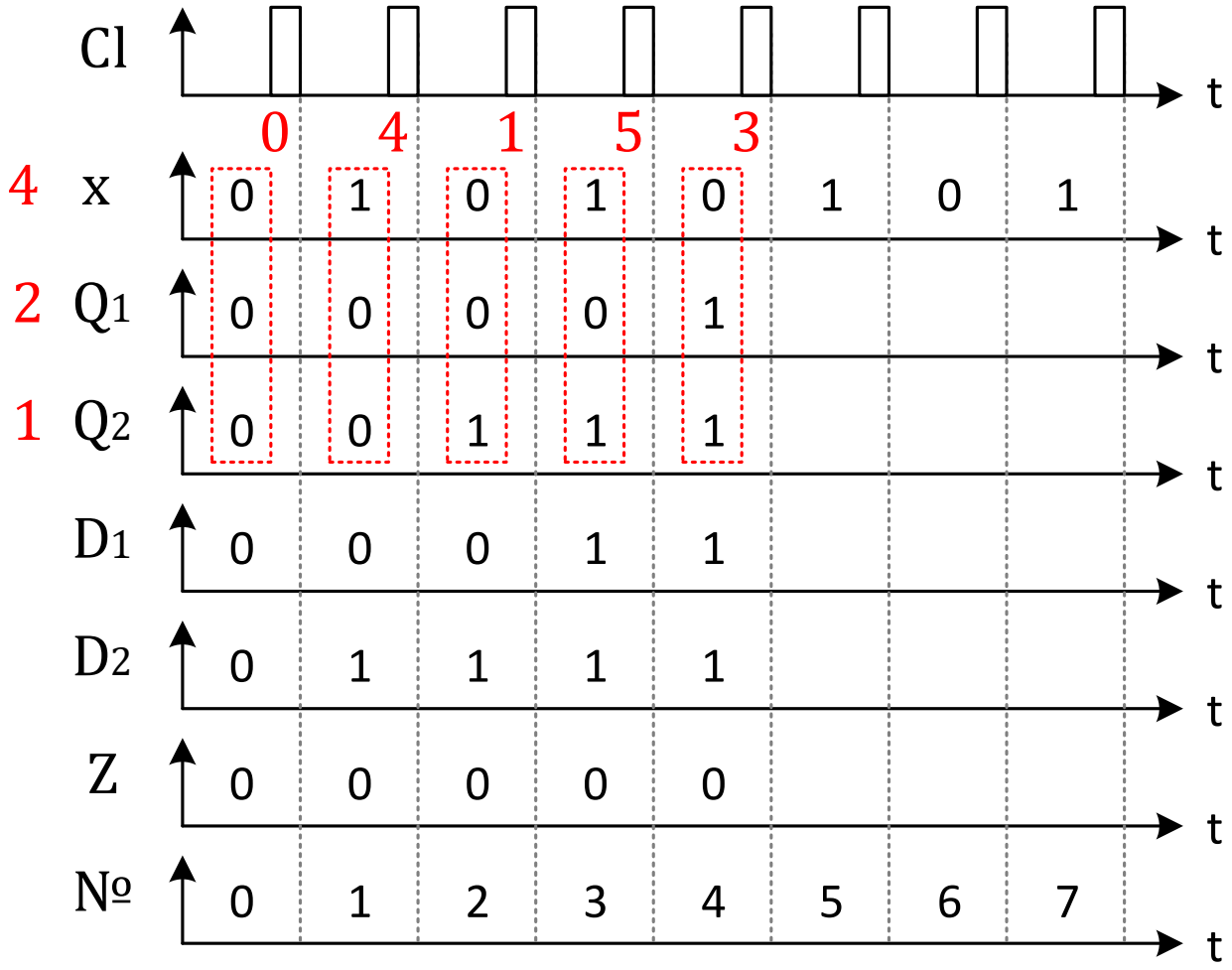
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



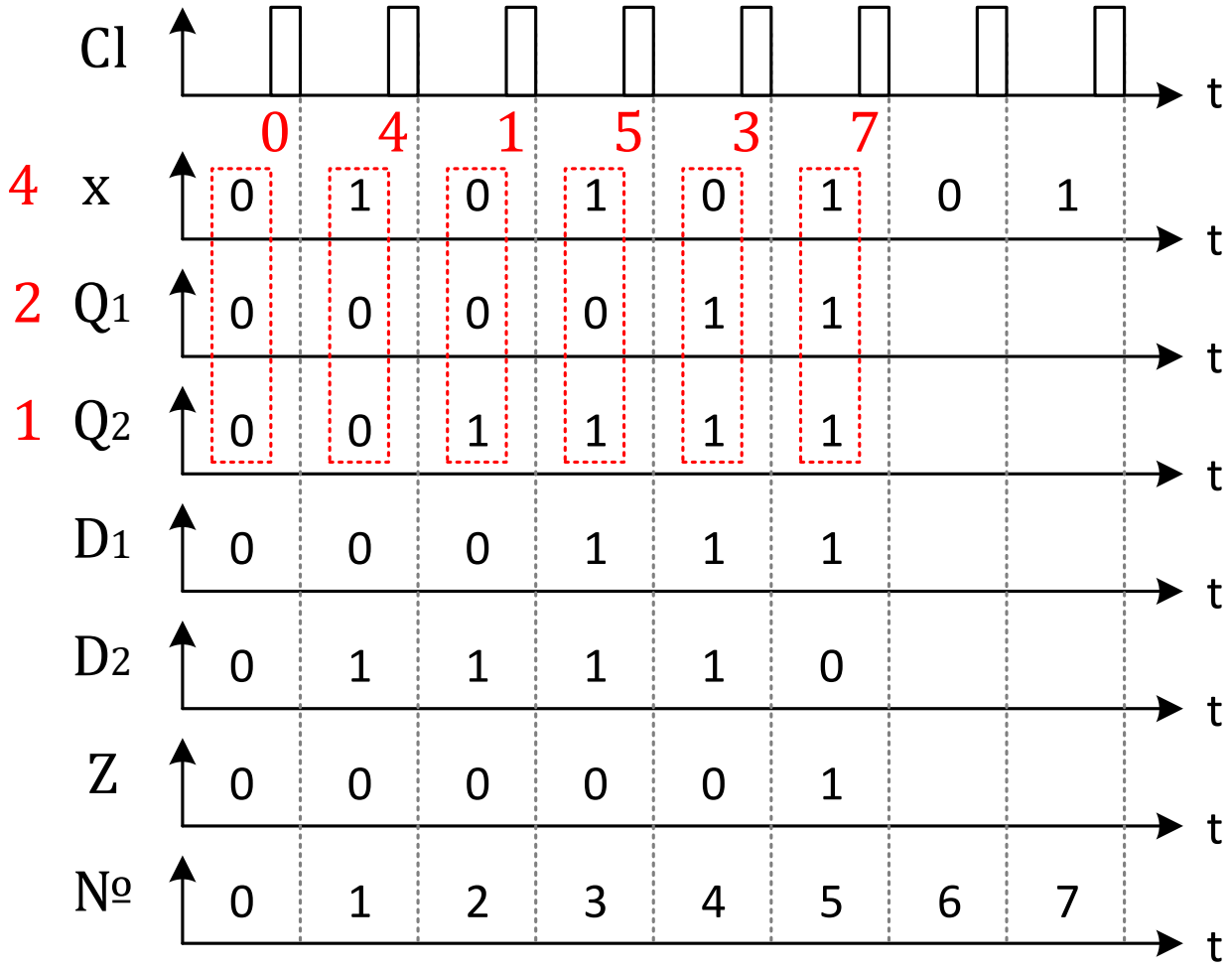
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



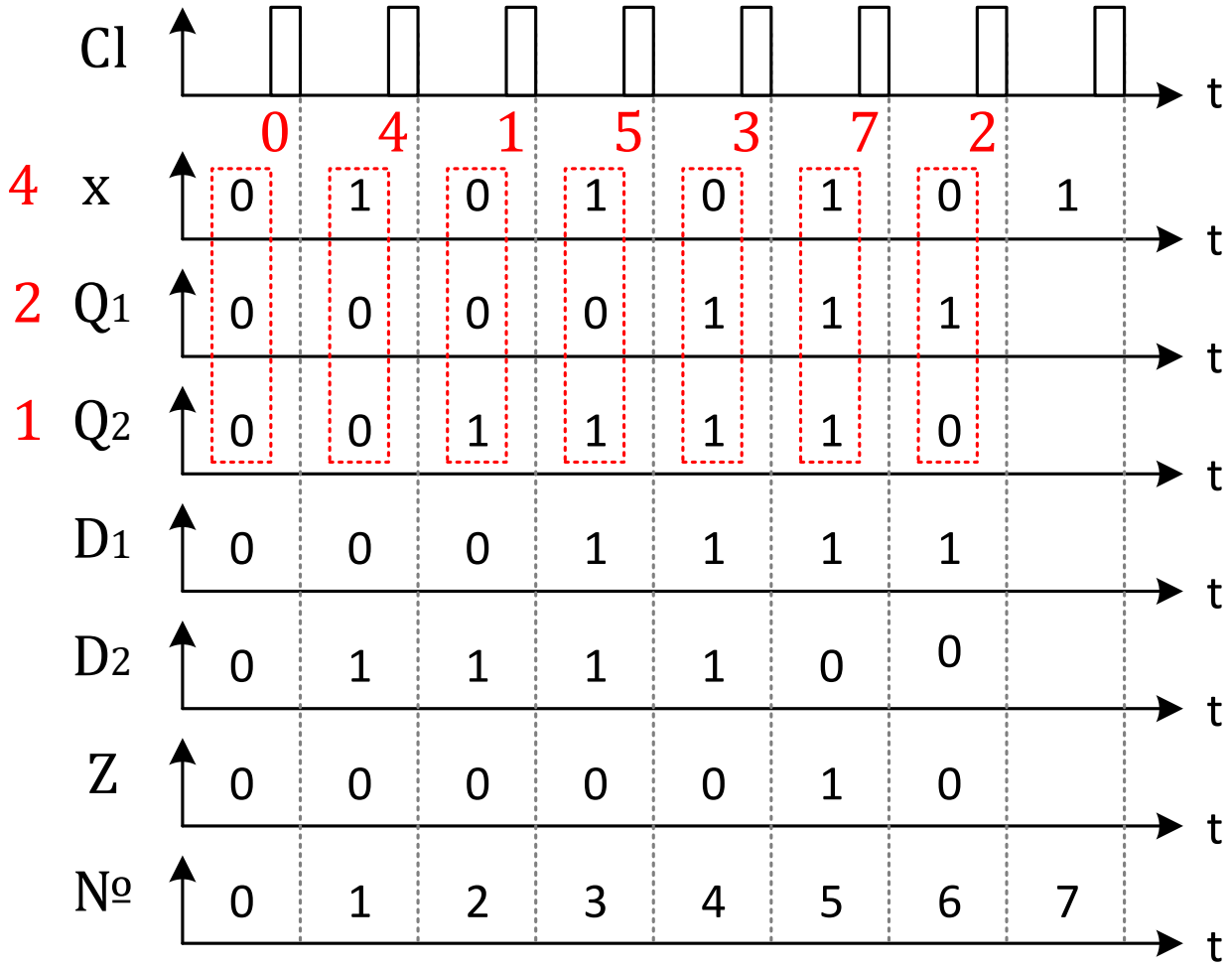
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



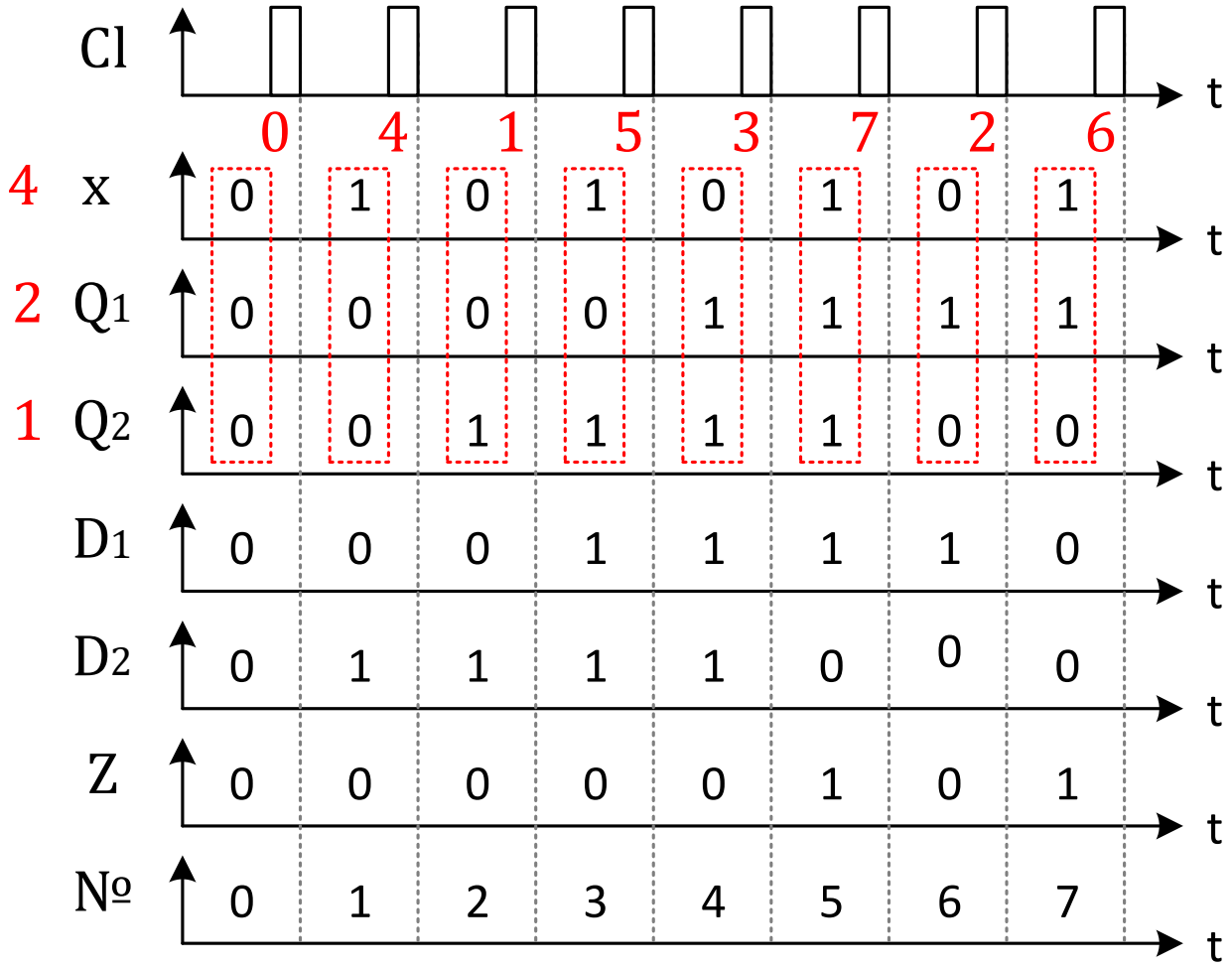
D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1

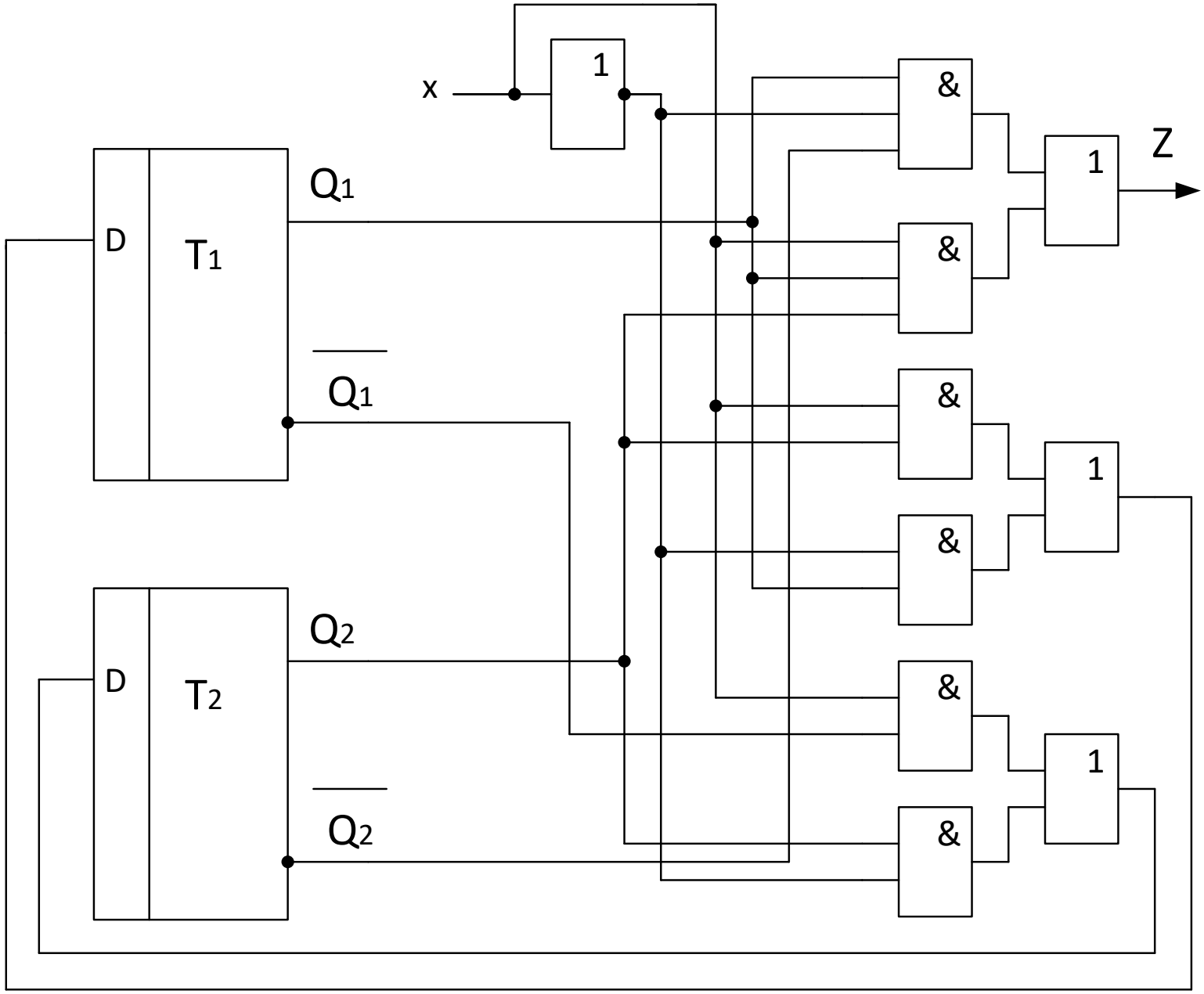


D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1

1. Да се построи време диаграмата за схемата при зададени начално вътрешно състояние 00 и входна последователност 0-1-0-1-0-1-0-1.



Решение:

1. Определяне на функциите:

$$D_1 = x.Q_2 \vee \bar{x}.Q_1$$
$$D_2 = x.\bar{Q}_1 \vee \bar{x}.Q_2$$
$$Z = \bar{x}.Q_1.\bar{Q}_2 \vee x.Q_1.Q_2$$

2. Попълване на КТПИ.

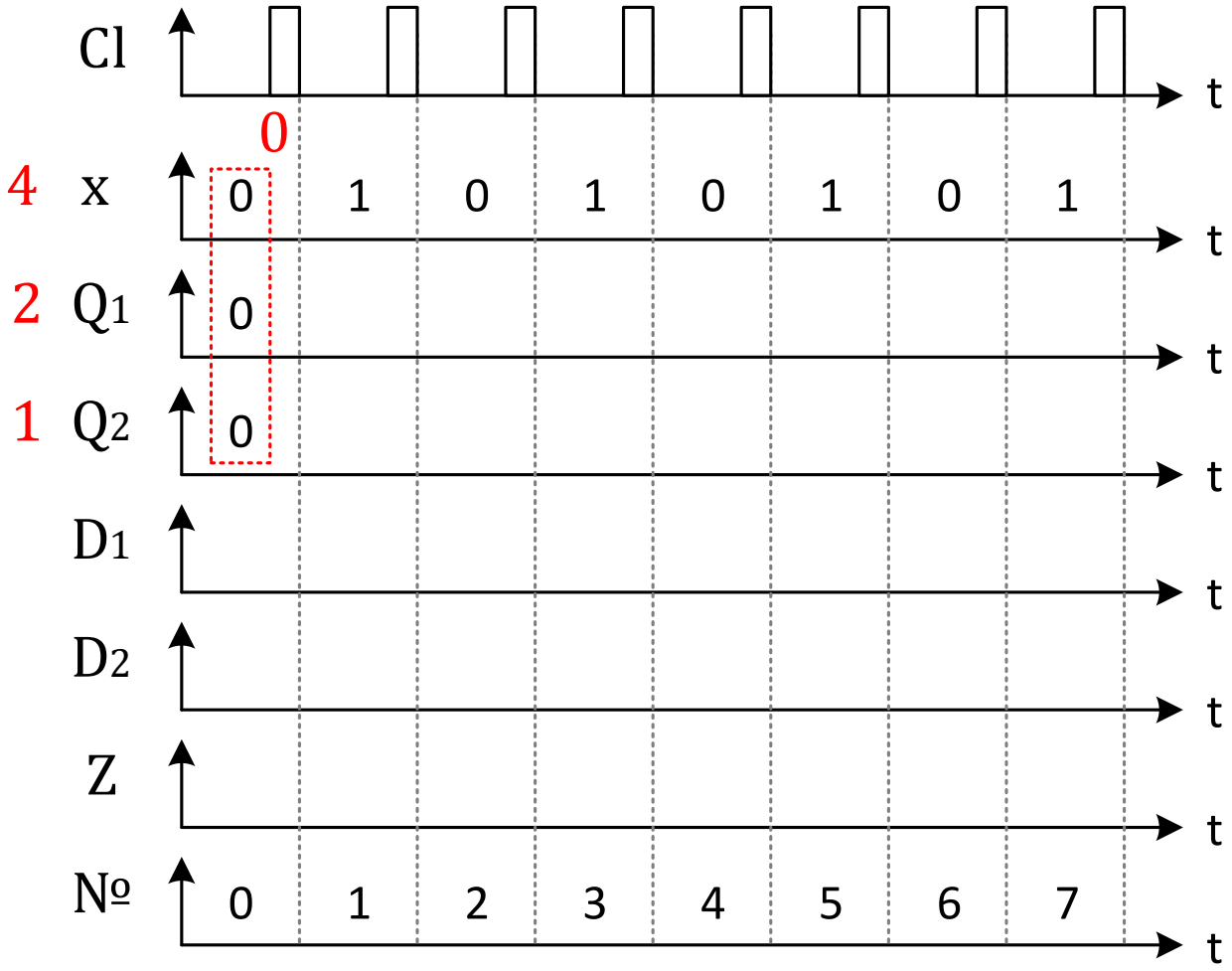
	A^t		A^{t+1}		Z^t	Y^t	
x	Q_1	Q_2	Q_1	Q_2	z	D_1	D_2
0	0	0					
0	0	1					
0	1	0					
0	1	1					
1	0	0					
1	0	1					
1	1	0					
1	1	1					

2. Попълване на КТПИ.

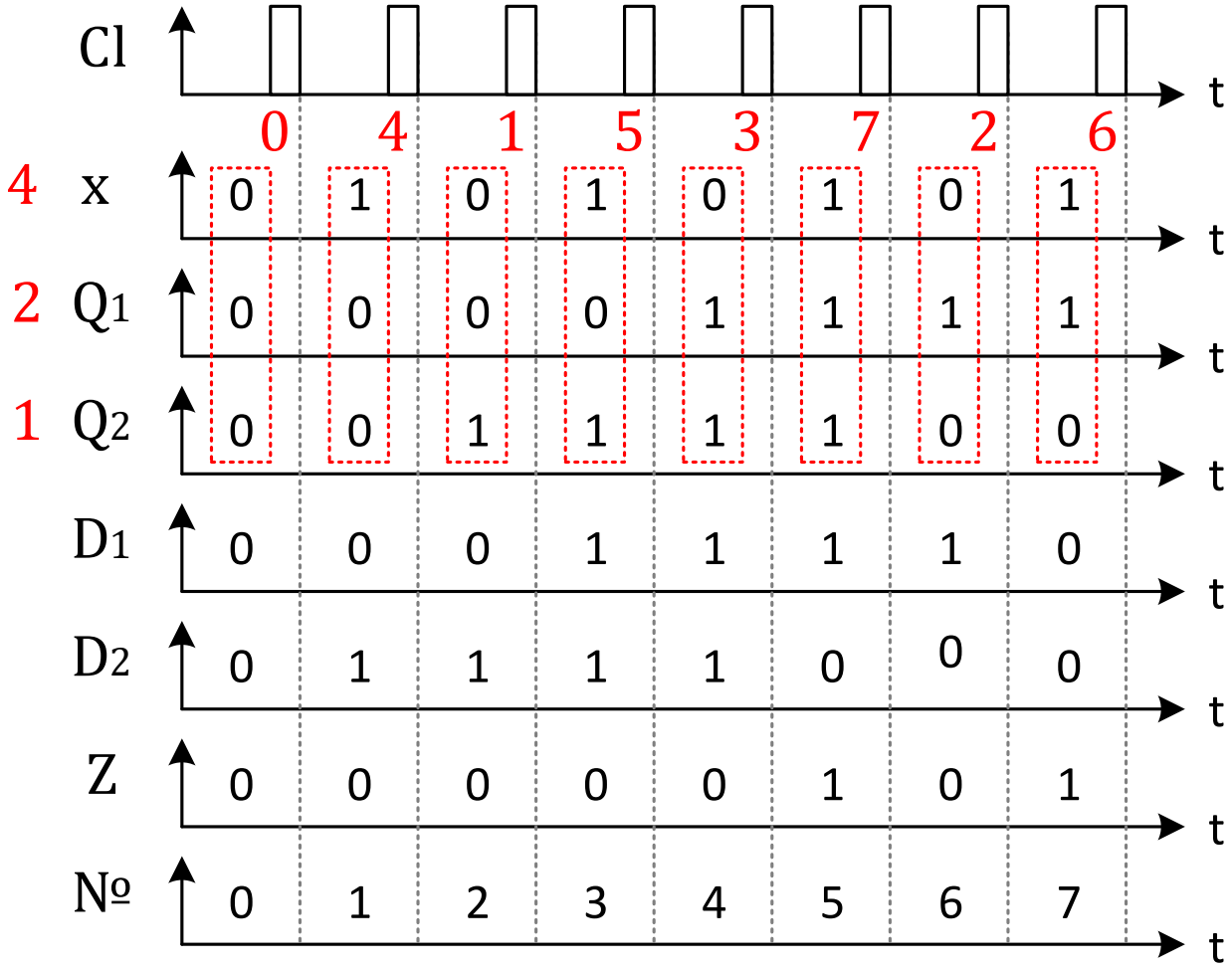
	A^t		A^{t+1}		Z^t	Y^t	
x	Q_1	Q_2	Q_1	Q_2	z	D_1	D_2
0	0	0			0	0	0
0	0	1			0	0	1
0	1	0			1	1	0
0	1	1			0	1	1
1	0	0			0	0	1
1	0	1			0	1	1
1	1	0			0	0	0
1	1	1			1	1	0

2. Попълване на КТПИ.

	A^t		A^{t+1}		Z^t	Y^t	
x	Q_1	Q_2	Q_1	Q_2	z	D_1	D_2
0	0	0	0	0	0	0	0
0	0	1	0	1	0	0	1
0	1	0	1	0	1	1	0
0	1	1	1	1	0	1	1
1	0	0	0	1	0	0	1
1	0	1	1	1	0	1	1
1	1	0	0	0	0	0	0
1	1	1	1	0	1	1	0

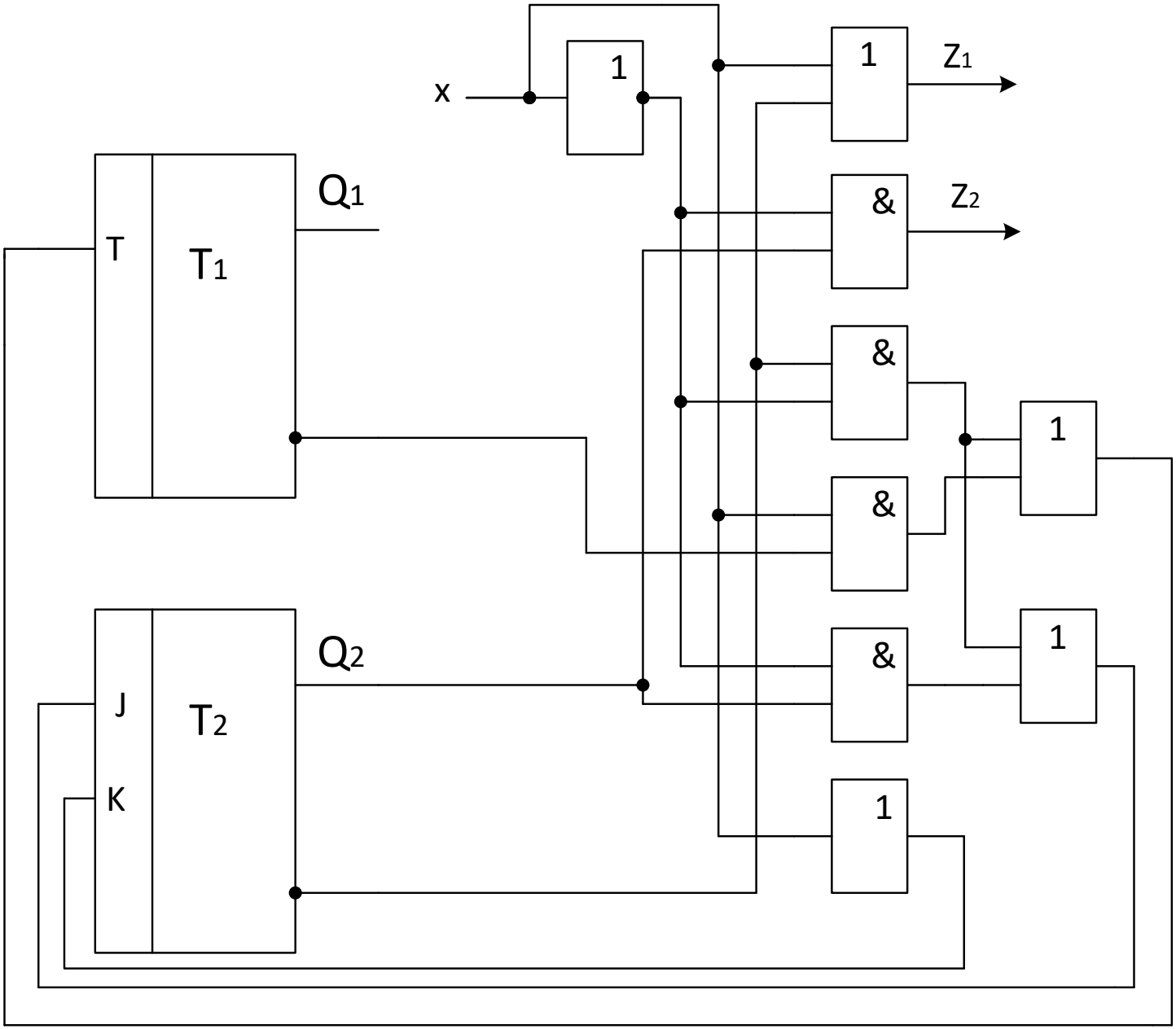


D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1



D^t	Q^t	Q^{t+1}
0	0	0
0	1	0
1	0	1
1	1	1

2.Да се построи време диаграмата за схемата при зададени начално вътрешно състояние 11 и входна последователност 1-1-0-0-1-1-0-0.



Решение:

1. Определяне на функциите:

$$T_1 = \bar{x}.\bar{Q}_2 \vee x.\bar{Q}_1$$
$$J_2 = \bar{x}.\bar{Q}_2 \vee \bar{x}.Q_2$$
$$K_2 = x$$
$$Z_1 = x \vee \bar{Q}_2$$
$$Z_2 = \bar{x}.Q_2$$

2. Локализация:

$$T_1 = \bar{x}.\bar{Q}_2 \vee x.\bar{Q}_1$$

Q_1 \ x				
	6	*7*	*3*	*2*
	4	*5*	*1*	*0*
		Q_2		

Q_1 \ x				
		Q_2		

$$T_1 =$$

Решение:

1. Определяне на функциите:

$T_1 = \bar{x}.\bar{Q}_2 \vee x.\bar{Q}_1$
$J_2 = \bar{x}.\bar{Q}_2 \vee \bar{x}.Q_2$
$K_2 = x$
$Z_1 = x \vee \bar{Q}_2$
$Z_2 = \bar{x}.Q_2$

2. Локализация:

$$T_1 = \bar{x}.\bar{Q}_2 \vee x.\bar{Q}_1$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
				1
	1	1		1
		Q_2		

$$T_1 = \vee\,(0, 2, 4, 5)^1$$

$J_2 = \bar{x}.\bar{Q}_2 \vee \bar{x}.Q_2$

Q_1 \ $\bar{x}$				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ $\bar{x}$				
		Q_2		

$J_2 =$

$K_2 = x$

Q_1 \ $\bar{x}$				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ $\bar{x}$				
		Q_2		

$K_2 =$

$J_2 = \bar{x}.\bar{Q}_2 \vee \bar{x}.Q_2$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
			1	1
			1	1
		Q_2		

$$J_2 = \vee\,(0, 1, 2, 3)^1$$

$K_2 = x$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
	1	1		
	1	1		
		Q_2		

$$K_2 = \vee\,(4, 5, 6, 7)^1$$

$$Z_1 = x \vee \bar{Q}_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		Q_2		

$Z_1 =$

$$Z_2 = \bar{x}.Q_2$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
		Q_2		

Q_1 \ x				
		Q_2		

$Z_2 =$

$$Z_1 = x \vee \bar{Q}_2$$

Q_1 \ x			
	6	7	3	2
	4	5	1	0
	Q_2			

Q_1 \ x			
	1	1		1
	1	1		1
	Q_2			

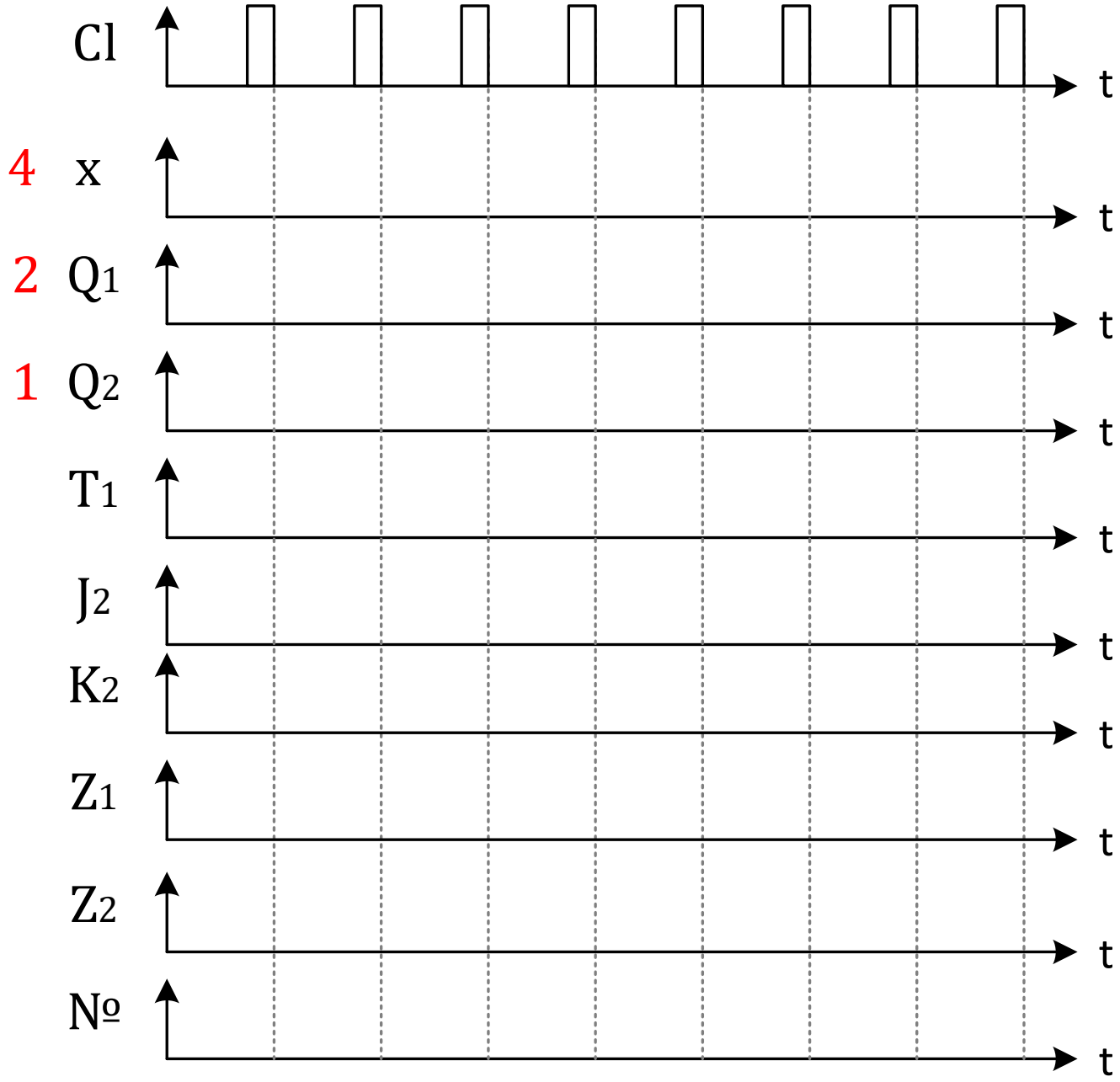
$$Z_1 = \vee\,(0, 2, 4, 5, 6, 7)^1$$

$$Z_2 = \bar{x}.Q_2$$

Q_1 \ x			
	6	7	3	2
	4	5	1	0
	Q_2			

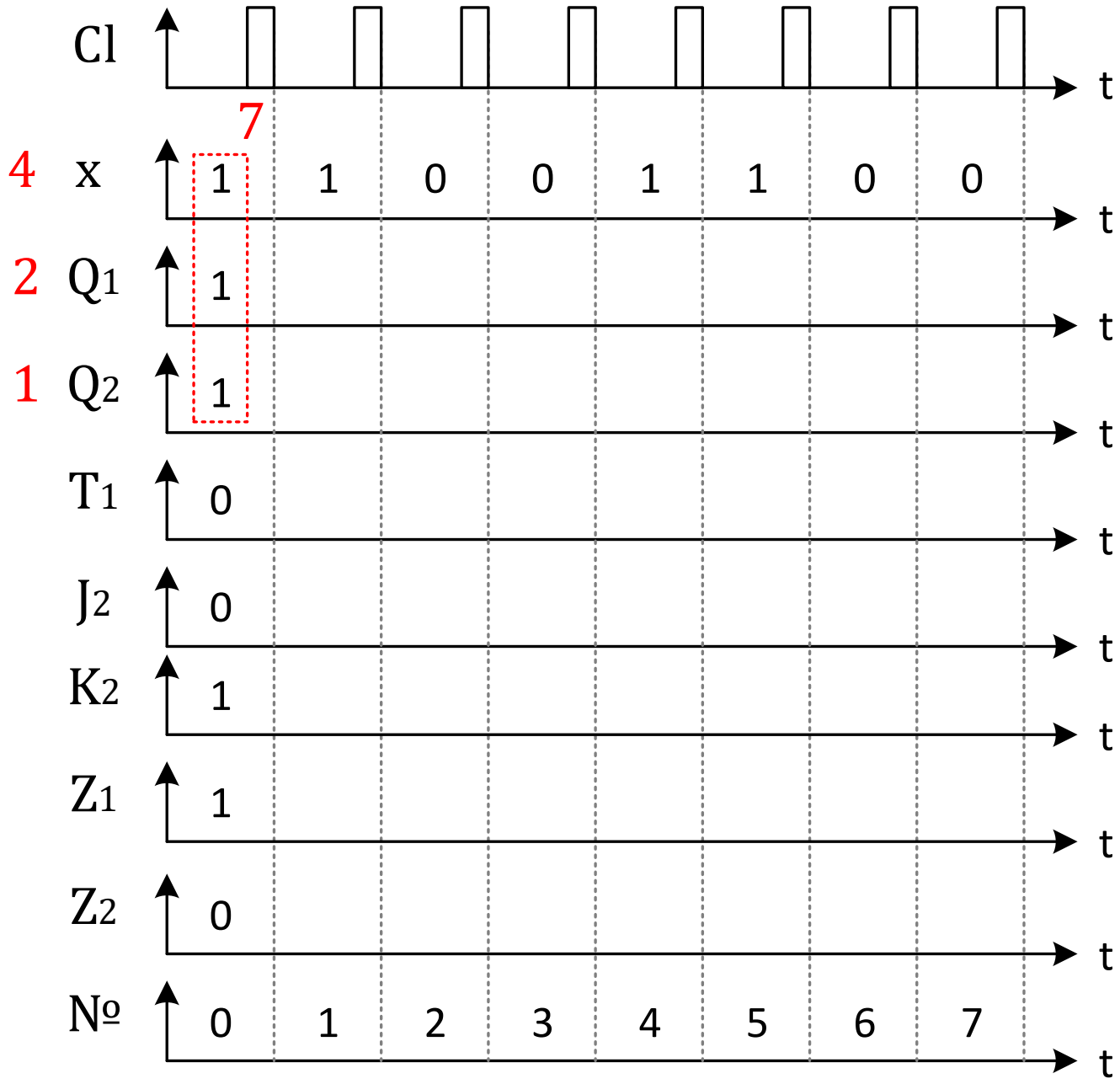
Q_1 \ x			
			1	
			1	
	Q_2			

$$Z_2 = \vee\,(1, 3)^1$$



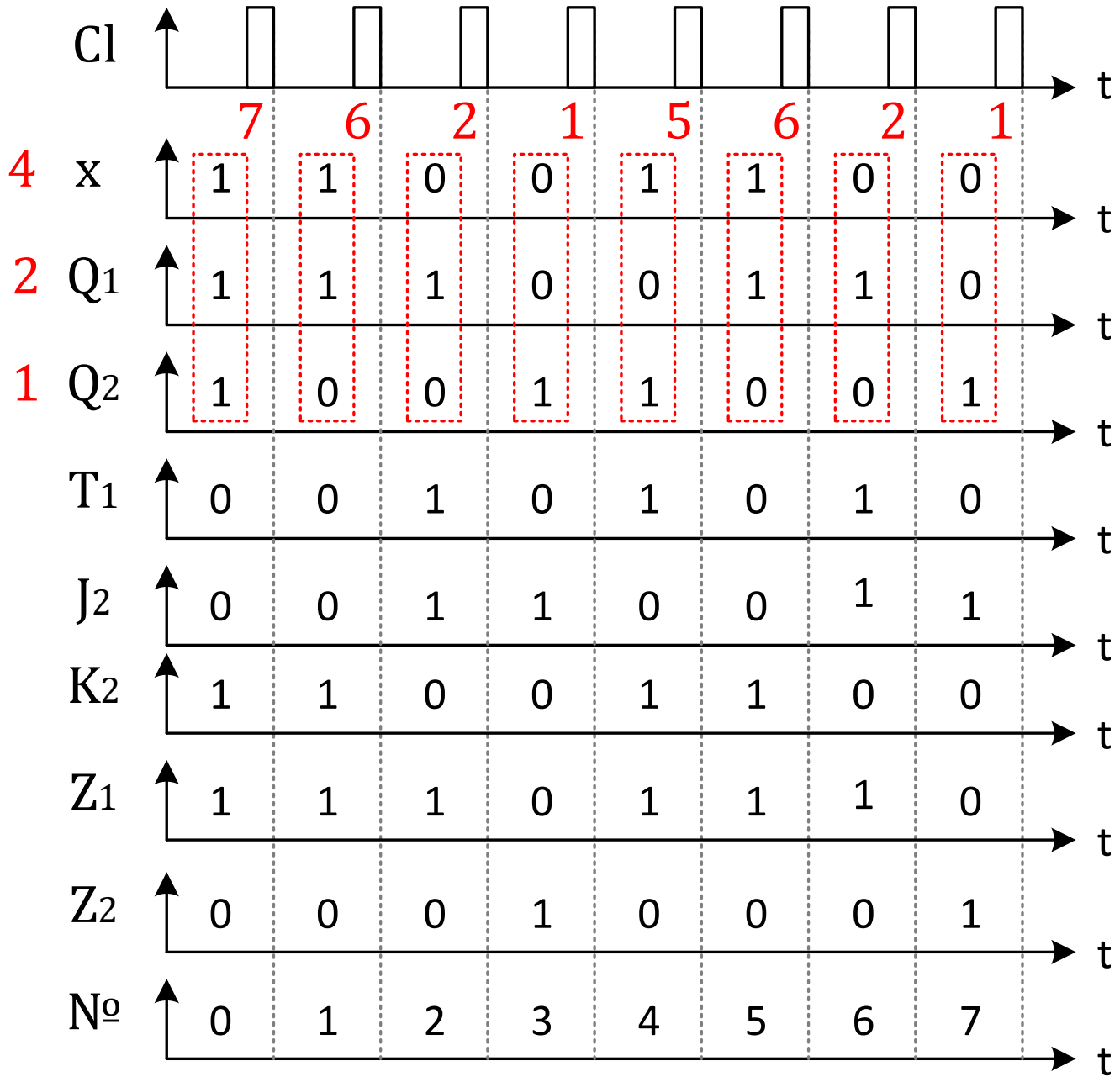
T^t	Q^t	Q^{t+1}
0	0	0
0	1	1
1	0	1
1	1	0

J^t	K^t	Q^t	Q^{t+1}
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0



T^t	Q^t	Q^{t+1}
0	0	0
0	1	1
1	0	1
1	1	0

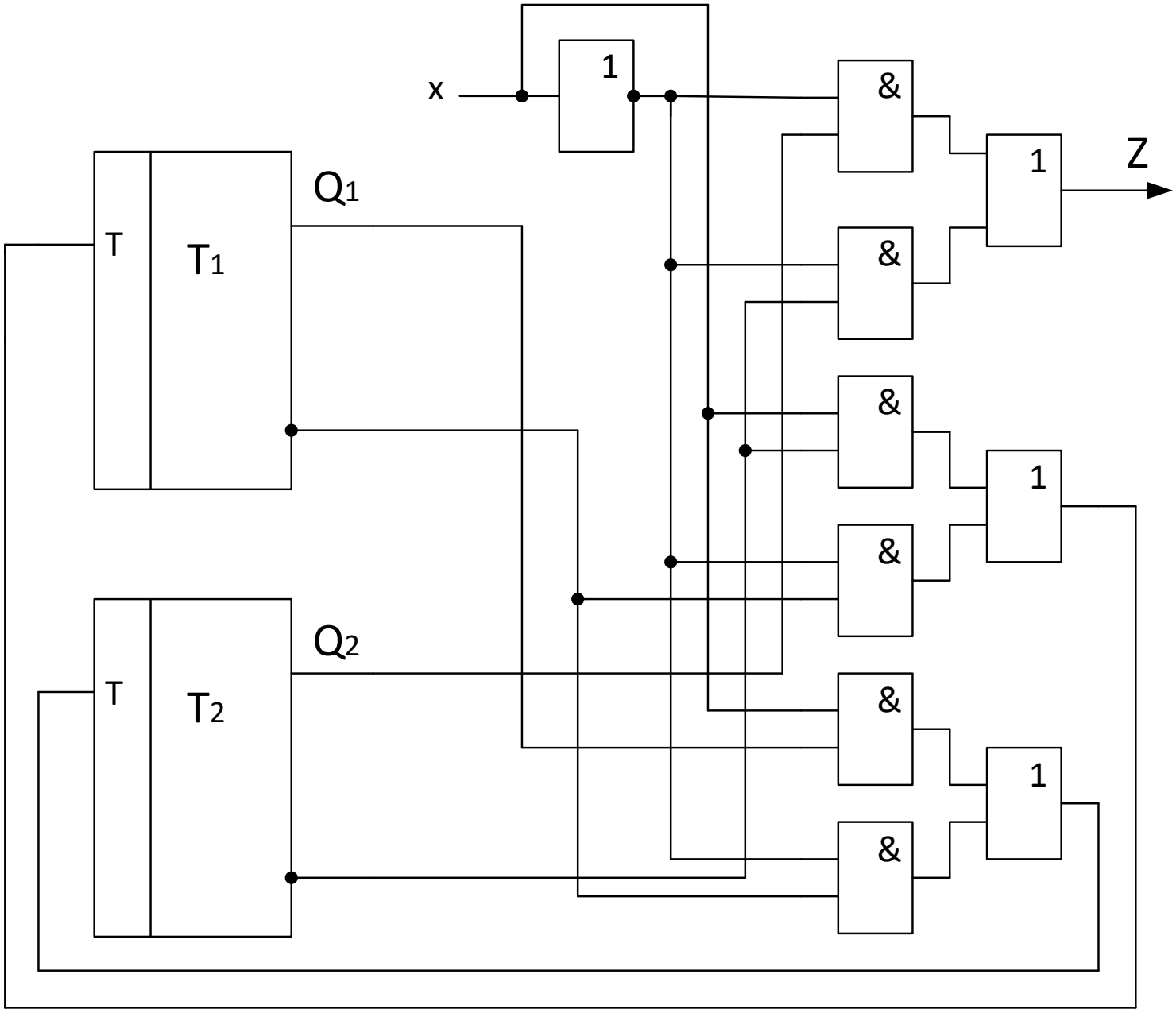
J^t	K^t	Q^t	Q^{t+1}
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0



T^t	Q^t	Q^{t+1}
0	0	0
0	1	1
1	0	1
1	1	0

J^t	K^t	Q^t	Q^{t+1}
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

3.Да се построи време диаграмата за схемата при зададени начално вътрешно състояние 11 и входна последователност 1-1-0-1-1-1-0-1.



Решение:

1. Определяне на функциите:

$$T_1 = x.\bar{Q}_2 \vee \bar{x}.\bar{Q}_1$$
$$T_2 = x.Q_1 \vee \bar{x}.\bar{Q}_1$$
$$Z = \bar{x}.Q_2 \vee \bar{x}.\bar{Q}_2$$

2. Локализация:

$$T_1 = x.\bar{Q}_2 \vee \bar{x}.\bar{Q}_1$$

Q_1 \ x				
	6	7	3	2
	4	5	1	0
				Q_2

Q_1 \ x				
	1			
	1		1	1
				Q_2

$$T_1 = \vee\,(0, 1, 4, 6)^1$$

$$T_2 = x.Q_1 \vee \bar{x}.\bar{Q}_1$$

$Q_1 \backslash x$				
	6	7	3	2
	4	5	1	0

Q_2

$Q_1 \backslash x$				
	1	1		
			1	1

Q_2

$$T_2 = \vee\,(0, 1, 6, 7)^1$$

$$Z = \bar{x}.Q_2 \vee \bar{x}.\bar{Q}_2$$

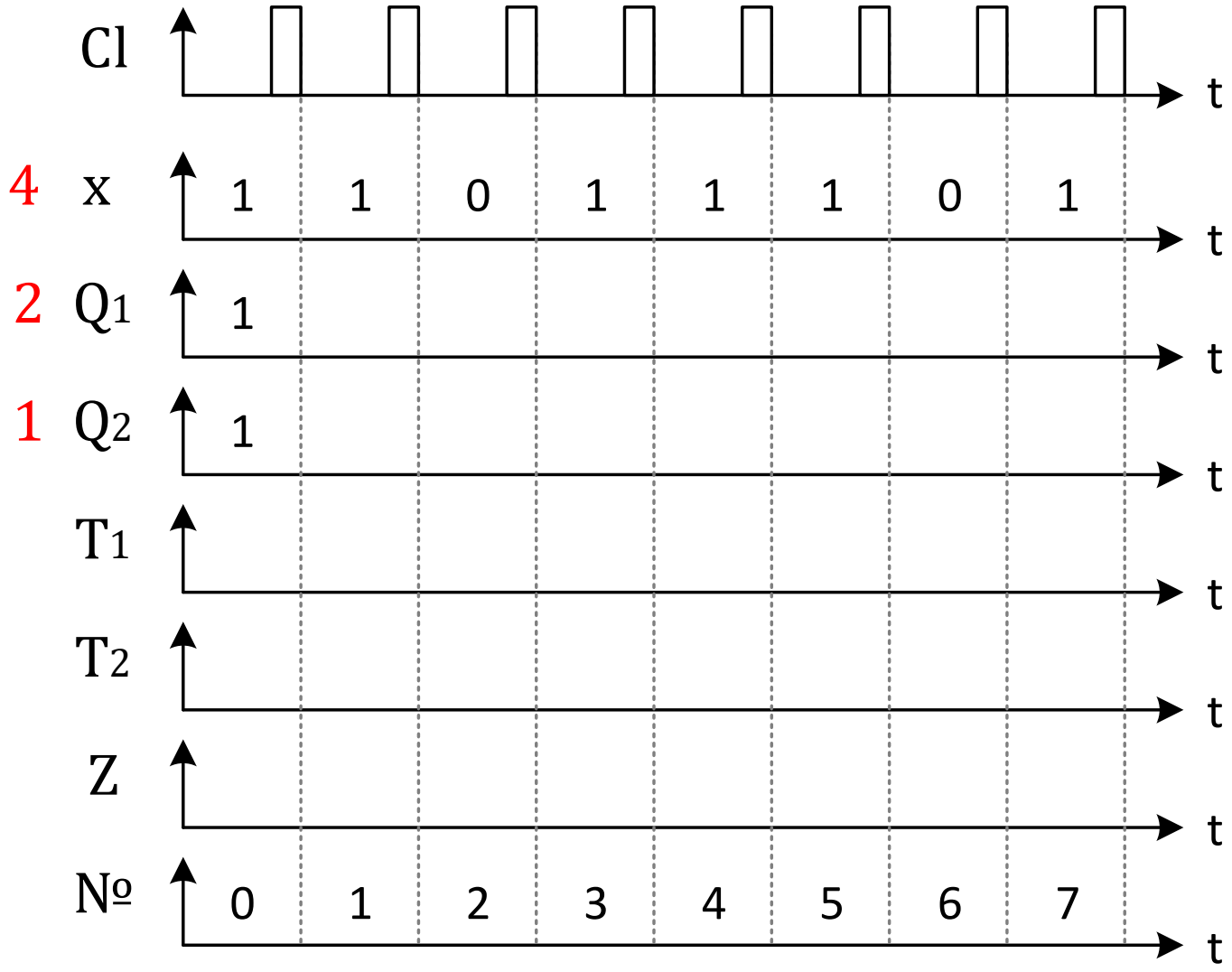
$Q_1 \backslash x$				
	6	7	3	2
	4	5	1	0

Q_2

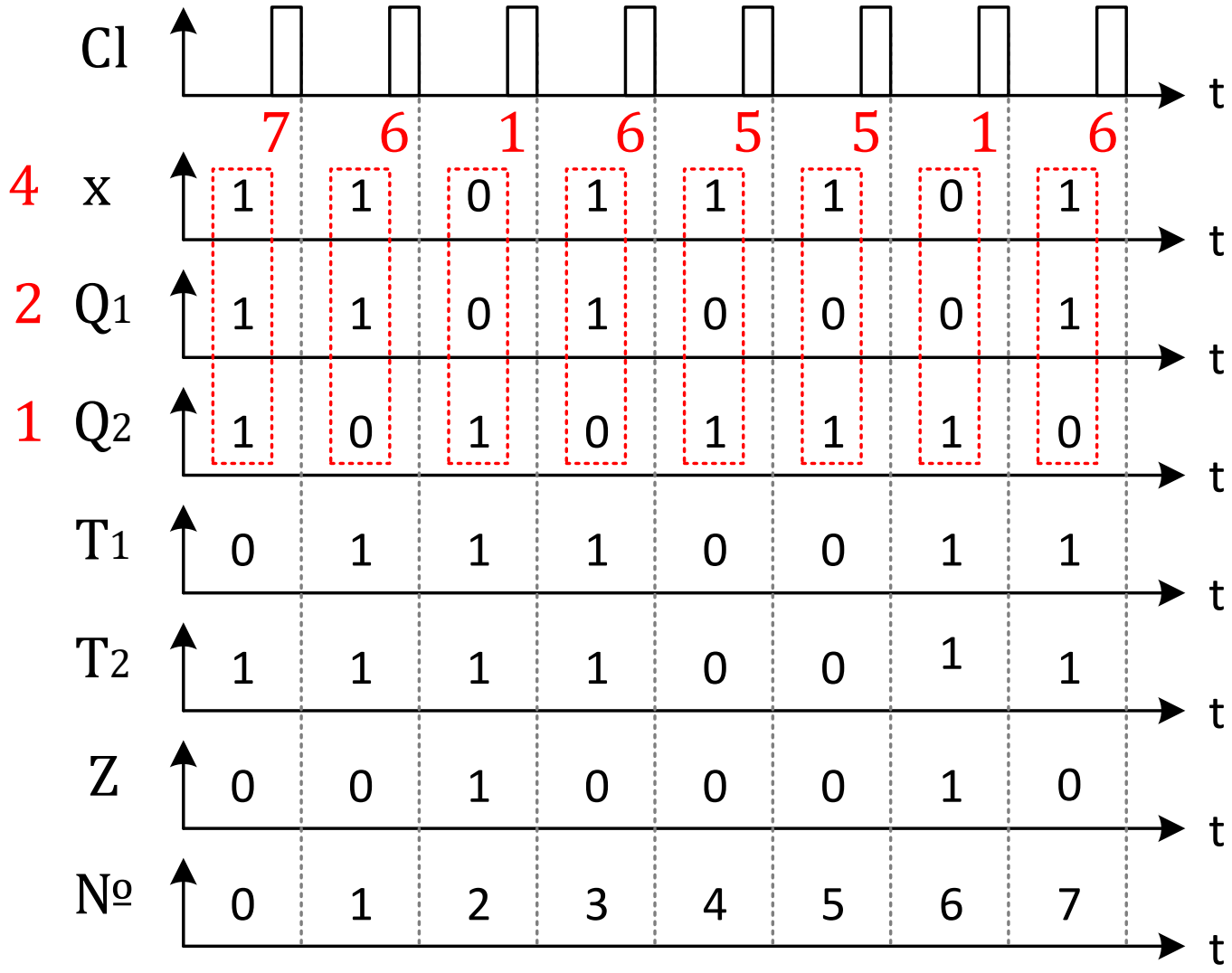
$Q_1 \backslash x$				
			1	1
			1	1

Q_2

$$Z = \vee\,(0, 1, 2, 3)^1$$



T^t	Q^t	Q^{t+1}
0	0	0
0	1	1
1	0	1
1	1	0



T^t	Q^t	Q^{t+1}
0	0	0
0	1	1
1	0	1
1	1	0