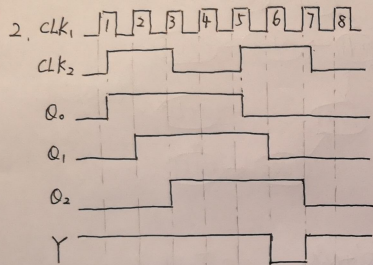


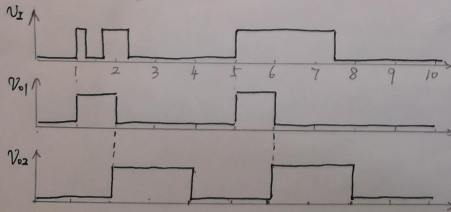
1.  $Y = A'B'C' + ABD + A'CD'$



3. (1)  $F = A'B' + A'C = ((A'B')' \cdot (A'C')')'$

(2) 图略

4. (1)  $t_{w1} = 1ms$ ;  $t_{w2} = 2ms$



5. (1) 转换精度与转换速度

(2)  $D = \frac{N}{V_{REF}} V_Z$  (令  $T_1 = NT_0$ )

(3) 25.6 ms

(1) 

ABC	Z1	Z2
000	0	0
001	1	0
010	1	0
011	0	1
100	1	0
101	0	1
110	0	1
111	1	1

$$Z_1 = A'B'C + A'BC' + ABC' + ABC$$

$$= (m_1' m_2' m_4' m_7')'$$

$$Z_2 = A'BC + AB'C + ABC' + ABC$$

$$= (m_3' m_5' m_6' m_7')'$$

(2) 图略

(1)

$$\begin{cases} D_0 = (Q_2 \oplus Q_1)' \\ J_1 = Q_2' Q_0, K_1 = Q_2 Q_0 \\ J_2 = (Q_2 \oplus Q_1) \cdot Q_0' \end{cases} \quad \begin{cases} Q_0^* = Q_2 Q_1 + Q_2' Q_1' \\ Q_1^* = Q_2' Q_0 + Q_1 Q_0' \\ Q_2^* = Q_2 Q_0 + Q_1 Q_0' \end{cases}$$

(2) 

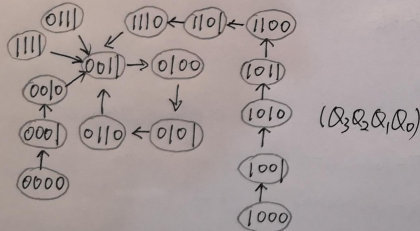
$Q_2 Q_1 Q_0$	$Q_2^* Q_1^* Q_0^*$
000	001
001	011
011	010
010	110
110	111
111	101
101	100
100	000

8进制计数

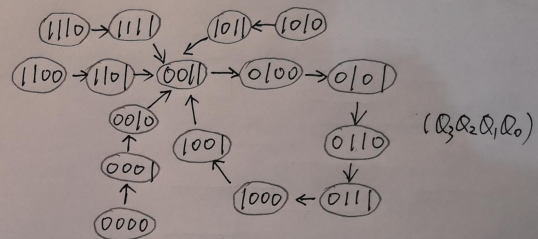
3. 时序图略

注意: 触发器是下降沿触发

四 (1)  $M=0$  时, 4进制计数



(2)  $M=1$  时, 7进制



(1) 
$$\begin{cases} Q_3^* = Q_3 Q_1 + Q_3' Q_1' \\ Q_2^* = Q_2 Q_1' + Q_2' Q_1 \\ Q_1^* = Q_2 Q_1 Q_0 \\ Q_0^* = Q_0' + Q_2 Q_1' Q_0 \end{cases} \quad \begin{cases} J_3 = K_3 = Q_1 \\ J_2 = Q_0, K_2 = Q_1 \\ J_1 = Q_2 Q_0, K_1 = 1 \\ J_0 = 1, K_0 = (Q_2 Q_1)' \end{cases}$$

$$C = Q_3 Q_1$$

(2) 图略