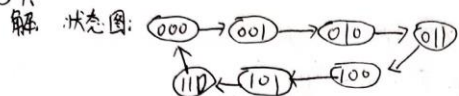


# 便笺

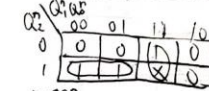
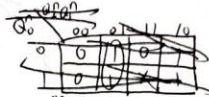
5-1.



状态转换图及真值表:

$Q_2$	$Q_1$	$Q_0$	$Q_2^{n+1}$	$Q_1^{n+1}$	$Q_0^{n+1}$	$D_2$	$D_1$	$D_0$
0	0	0	0	0	1	0	0	1
0	0	1	0	1	0	0	1	0
0	1	0	0	1	1	0	1	1
0	1	1	1	0	0	1	0	0
1	0	0	1	0	1	1	0	1
1	0	1	1	1	0	1	1	0
1	1	0	0	0	0	0	0	0
1	1	1	<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>	<del>0</del>

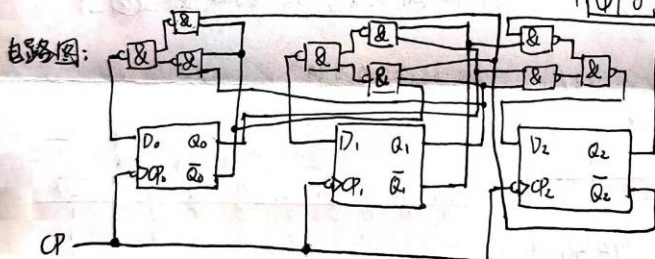
卡诺图:



$$D_2 = Q_2 \bar{Q}_1 + Q_1 \bar{Q}_0 = \bar{Q}_2 \bar{Q}_1 + \bar{Q}_1 \bar{Q}_0$$

$$D_1 = \bar{Q}_2 \bar{Q}_0 + \bar{Q}_2 Q_1 \bar{Q}_0 = \bar{Q}_2 \bar{Q}_0 + \bar{Q}_2 Q_1 \bar{Q}_0$$

$$D_0 = \bar{Q}_2 \bar{Q}_0 + \bar{Q}_2 Q_1 \bar{Q}_0 = \bar{Q}_2 \bar{Q}_0 + \bar{Q}_2 Q_1 \bar{Q}_0$$



5-7.

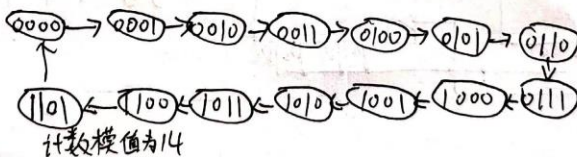
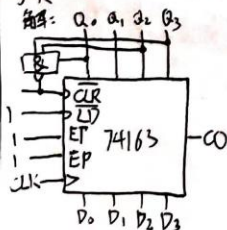


Diagram illustrating the sequence of states for a 3-bit counter (000 to 111) using D flip-flops:

```
graph LR; 000((000)) --> 001((001)); 001 --> 010((010)); 010 --> 011((011)); 011 --> 100((100)); 100 --> 101((101)); 101 --> 110((110)); 110 --> 111((111)); 111 --> 000;
```

光为1时

Diagram illustrating the sequence of operations for the first iteration of the bubble sort algorithm:

```

graph LR
    A((0000)) --> B((0001))
    B --> C((0010))
  
```

The sequence shows the progression of the array state during the first iteration of the bubble sort algorithm. The first iteration involves comparing the first two elements (0 and 0) and swapping them if necessary. The second iteration involves comparing the second and third elements (0 and 0) and swapping them if necessary. The third iteration involves comparing the third and fourth elements (0 and 1) and swapping them if necessary. The final state of the array after the first iteration is 0010.

Diagram illustrating the sequence of states in the Turing machine:

```

graph LR
    S(( )) --> S1((0|0|))
    S1 --> S2((0|00))
    S2 --> S3((00|1))
    S3 --> S4(( ))
  
```

The sequence of states is:  $0|0| \leftarrow 0|00 \leftarrow 00|1$ .

十进制值为6

解:  $\overline{CLR} = \overline{Q_5 Q_3 Q_0}$  当  $Q_5 = Q_3 = Q_0 = 1$  时,  $\overline{CLR} = 0$

$Q_7$	$Q_6$	$Q_5$	$Q_4$	$Q_3$	$Q_2$	$Q_1$	$Q_0$	CLR
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	1
				⋮				⋮
0	0	1	0	1	0	0	1	● 1
0	0	1	0	1	0	1	0	● 0
0	0	1	0	1	0	1	1	✗
				⋮				⋮

74160为异步清零,故计数模值为~~20~~29

5-10.  $Q_0, Q_1, Q_2, Q_3$

$Q, Q_1, Q_2, Q_3$

解:计数模值为39

$$\overline{LD} = Q_5 \cdot Q_4 \cdot Q_3$$

74160为同步置数,当 $Q_5=Q_4=Q_3=0$ 时,  $\overline{LD}=0$

$Q_7$	$Q_6$	$Q_5$	$Q_4$	$Q_3$	$Q_2$	$Q_1$	$Q_0$	$\Sigma$
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	1
0	0	1	1	1	0	0	0	0
0	0	1	1	1	0	0	1	X

