

2-2、(a)

解:

$$Z = \overline{A} \oplus \overline{B + C} \oplus \overline{AC} \cdot \overline{BC} \cdot \overline{A}$$

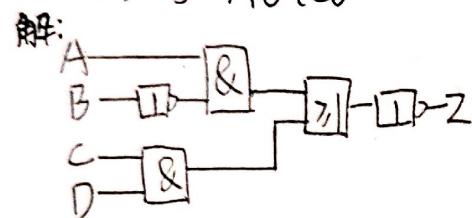
$$Z = \overline{A} \oplus \overline{B + C} \oplus (\overline{A} + \overline{C}) \overline{B} \cdot \overline{C} \cdot \overline{A}$$

$$Z = \overline{A} \oplus \overline{B} \overline{C} \oplus \overline{A} \overline{B} \overline{C}$$

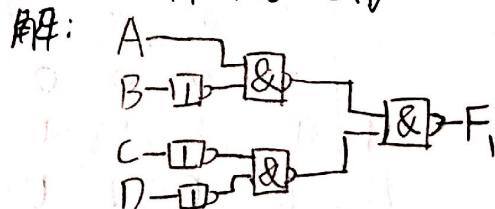
真值表:

A	B	C	Z	A	B	C	Z
0	0	0	1	1	0	0	1
0	0	1	1	1	0	1	0
0	1	0	1	1	1	0	0
0	1	1	1	1	1	1	0

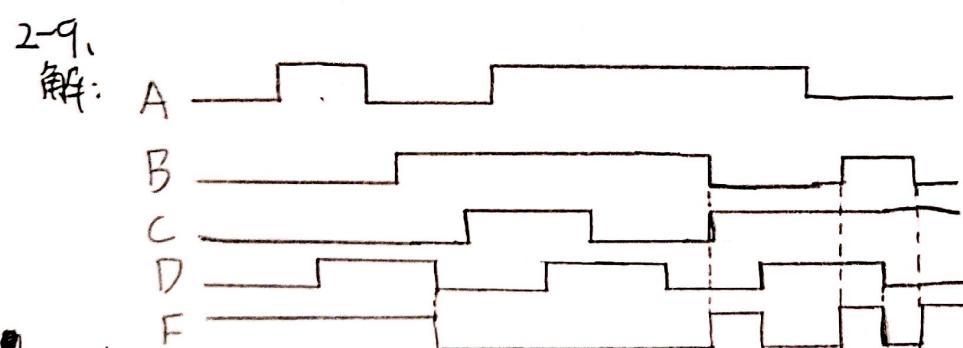
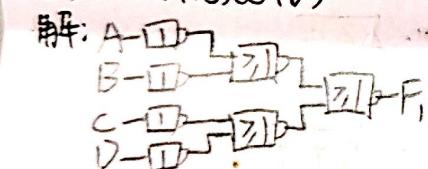
2-4.(5)  $F_5 = \overline{AB} + CD$



2-5.(1).  $F_1 = AB + \overline{CD}$



2-6.  
(1)  $F_1 = (A + \overline{B})(\overline{C} + \overline{D})$

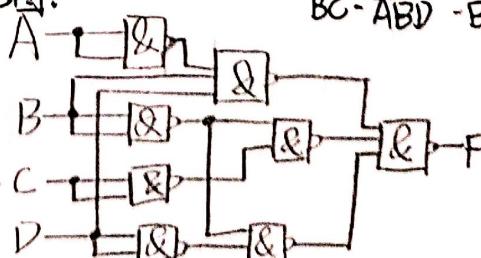


卡诺图:

		CD	00	01	11	10
		AB	00	01	11	10
00	00	1	1	0	0	1
00	01	1	1	0	1	1
00	10	1	1	0	1	1
00	11	0	1	1	0	0
01	00	0	1	0	0	0
01	01	1	1	0	1	0
01	10	0	1	1	0	0
01	11	1	1	1	1	0
10	00	1	1	0	0	1
10	01	1	1	0	1	1
10	10	1	1	1	0	1
10	11	0	1	1	1	1

A	B	C	D	F	A	B	C	D	F
0	0	0	0	1	1	0	0	0	1
0	0	0	1	1	1	0	0	1	1
0	0	1	0	1	1	0	1	0	1
0	0	1	1	0	1	0	1	1	0
0	1	0	0	0	1	0	0	0	0
0	1	0	1	1	1	0	1	0	0
0	1	1	0	0	1	1	0	0	0
0	1	1	1	1	1	1	1	1	1

路图:



2-13.  
解：真值表：分别以A、B、C、D代表 $T_3$ 、 $T_2$ 、 $T_1$ 、 $T_0$

A	B	C	D	X	Y	A	B	C	D	X	Y
0	0	0	0	1	0	1	0	0	0	0	0
0	0	0	1	1	0	1	0	0	1	0	0
0	0	1	0	1	0	1	0	1	0	0	0
0	0	1	1	1	0	1	0	1	1	0	1
0	1	0	0	1	0	1	1	0	0	0	1
0	1	0	1	0	0	1	1	0	1	0	1
0	1	1	0	0	0	1	1	1	0	0	1
0	1	1	1	0	0	1	1	1	1	1	0

卡诺图：

X:

AB\CD	00	01	11	10
00	1	1	1	P
01	1	0	0	0
11	0	0	0	0
10	0	0	0	0

$$X = \overline{AB} + \overline{ACD}$$

$$X = \overline{\overline{AB} \cdot \overline{ACD}}$$

$$\text{即 } X = \overline{\overline{T_3 \cdot T_2} \cdot \overline{T_3 \cdot T_4 \cdot T_0}}$$

AB\CD	00	01	11	10
00	0	0	0	0
01	0	0	0	0
11	1	1	1	D
10	0	0	1	0

$$Y = \overline{AB} + ACD$$

$$Y = \overline{\overline{AB} \cdot ACD}$$

$$\cancel{Y = \overline{\overline{T_3 \cdot T_2} \cdot \overline{T_3 \cdot T_4 \cdot T_0}}}$$

$$Y = AB + ACD$$

$$Y = \overline{\overline{AB} \cdot \overline{ACD}}$$

$$\cancel{Y = \overline{\overline{T_3 \cdot T_2} \cdot \overline{T_3 \cdot T_4 \cdot T_0}}} \quad Y = \overline{\overline{T_3 T_2} \cdot \overline{T_3 T_4 T_0}}$$

电路图：

