

# 第三章作业

习题3、4、6、7、9、11

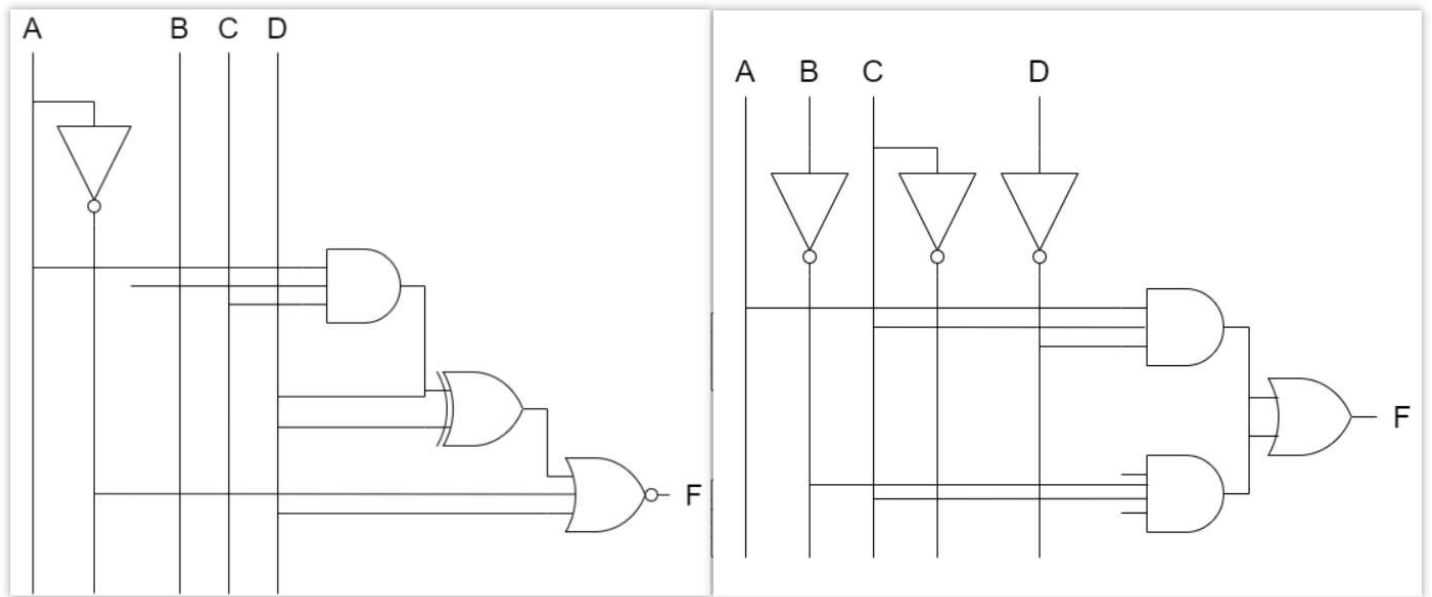
3.

$$F_1 = AB + \overline{A}C + \overline{A}BD$$
$$F_2 = \overline{A}C + \overline{A}BD + \overline{B}CD + A\overline{B}C\overline{D}$$

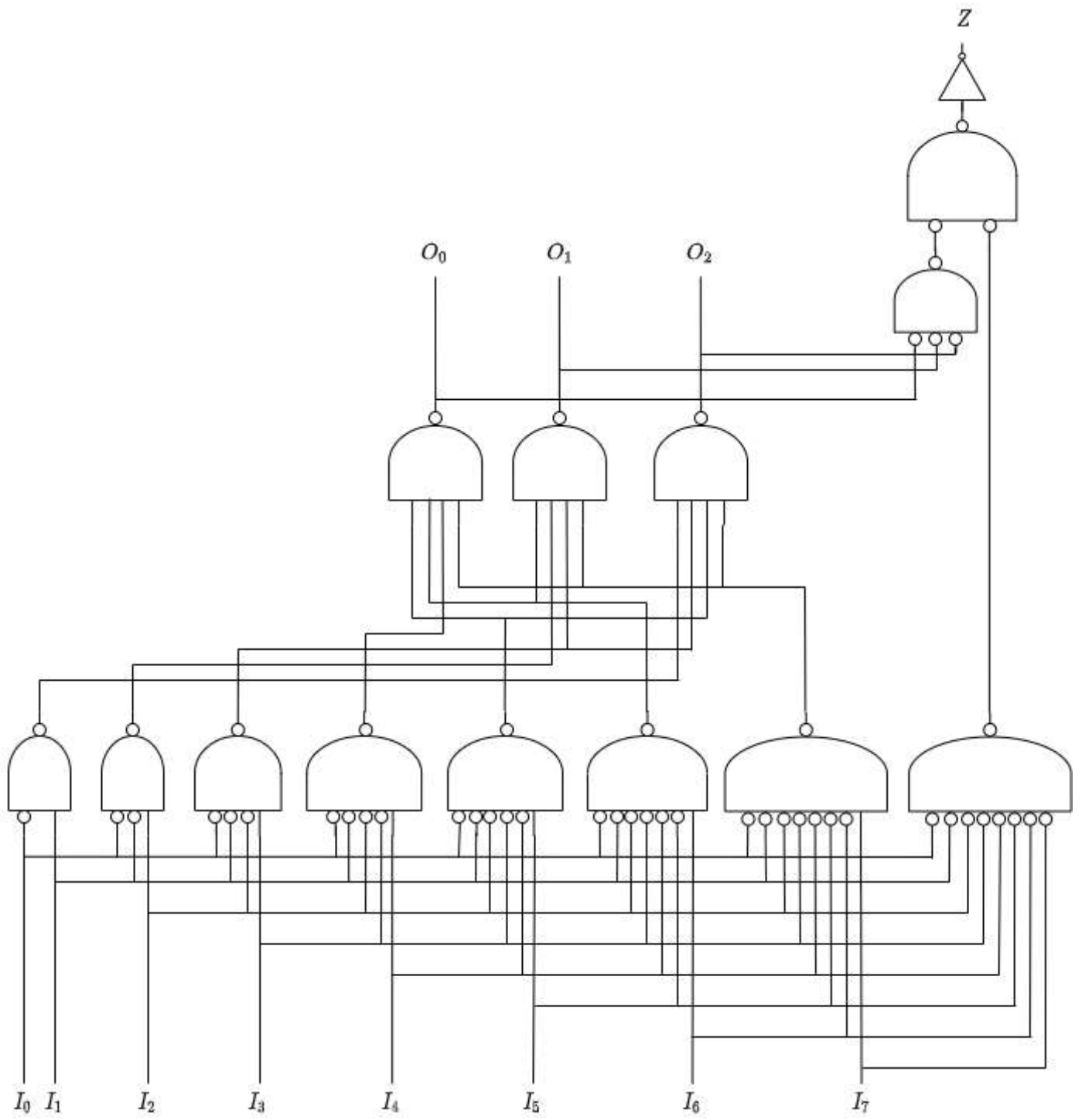
4.

A	B	C	D	$\overline{A \cdot B \cdot C \oplus D + \overline{A} + D}$
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0

$$\therefore F = A \cdot \overline{C} \cdot \overline{D} + A \cdot \overline{B} \cdot C \cdot \overline{D}$$

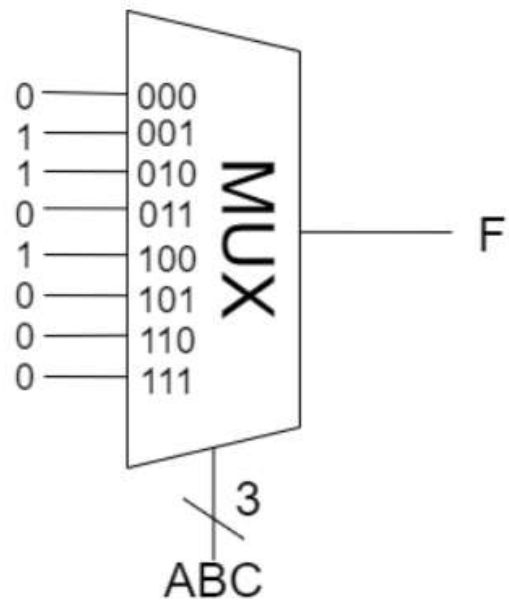


6.

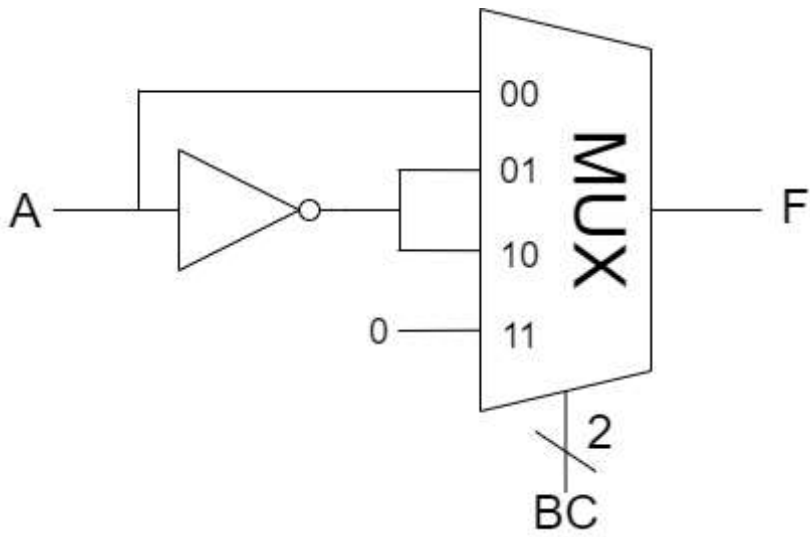


7.

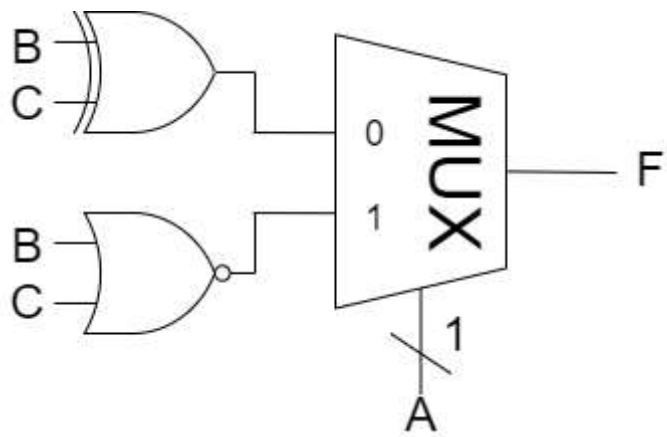
(1)



(2)



(3)



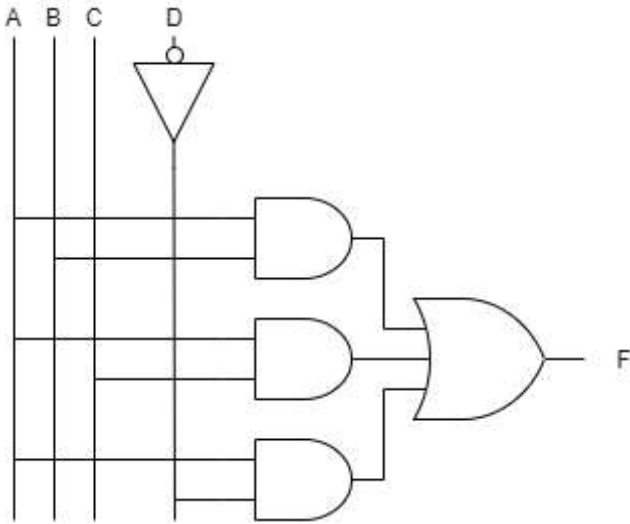
9.

**(1)**

将真值表上半部分的无关项真值都看作 0, 下半部分的无关项真值都看作 1.

$$\therefore F = A \cdot (\overline{A} + B + C + \overline{D}) = A \cdot B + A \cdot C + A \cdot \overline{D}$$

**(2)**



**11.**

**(a)**

$$T_{pd} = 40 + 55 = 95 \text{ (ps)}$$

$$T_{cd} = 25 \text{ (ps)}$$

**(b)**

$$T_{pd} = 40 + 15 + 15 + 55 = 125 \text{ (ps)}$$

$$T_{cd} = 15 + 15 + 25 = 55 \text{ (ps)}$$

**(c)**

$$T_{pd} = 30 + 45 = 75 \text{ (ps)}$$

$$T_{cd} = 15 + 25 = 40 \text{ (ps)}$$

传输延迟最长的是 2.30b, 传输延迟最短的是 2.30c.