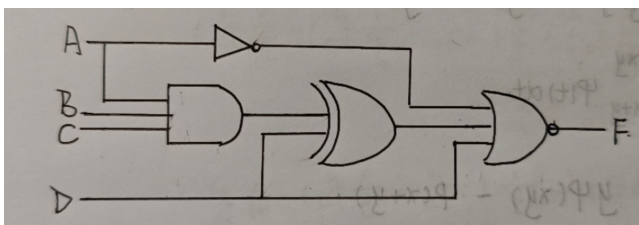


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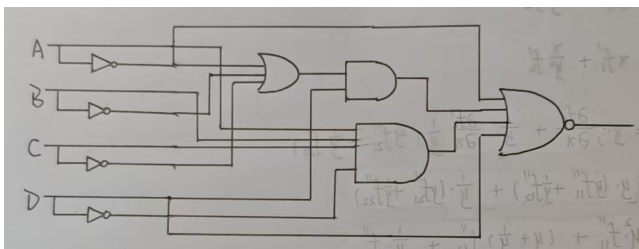
3. $F_1 = A \cdot B + \bar{A} \cdot C + \bar{A} \cdot B \cdot D$

$$F_2 = \bar{A} \cdot B \cdot D + \bar{A} \cdot C + \bar{B} \cdot C \cdot D + A \cdot \bar{B} \cdot C \cdot \bar{D}$$

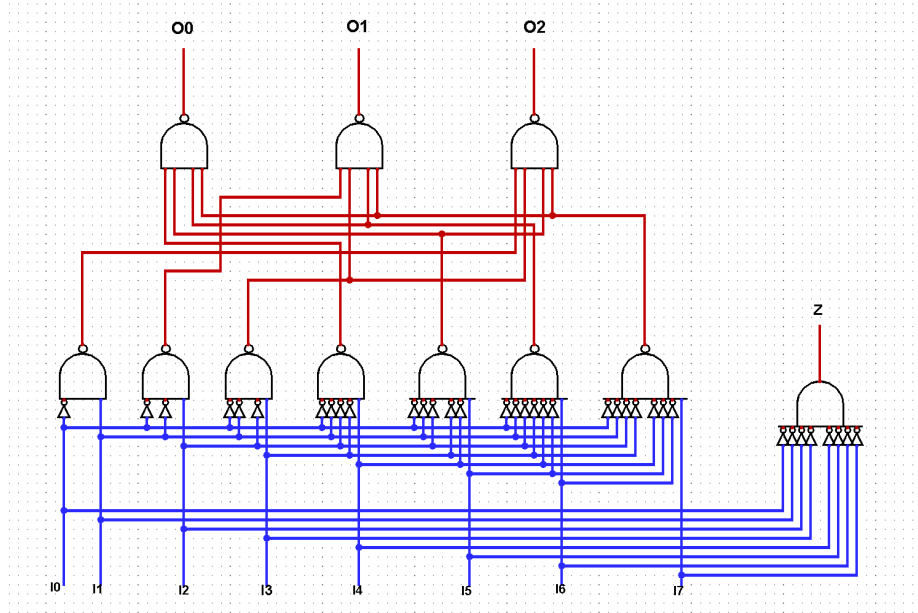
4.



换为与-或表达式为: $\overline{(\bar{A} + \bar{B} + \bar{C}) \cdot D + A \cdot B \cdot C \cdot \bar{D} + \bar{A} + D}$

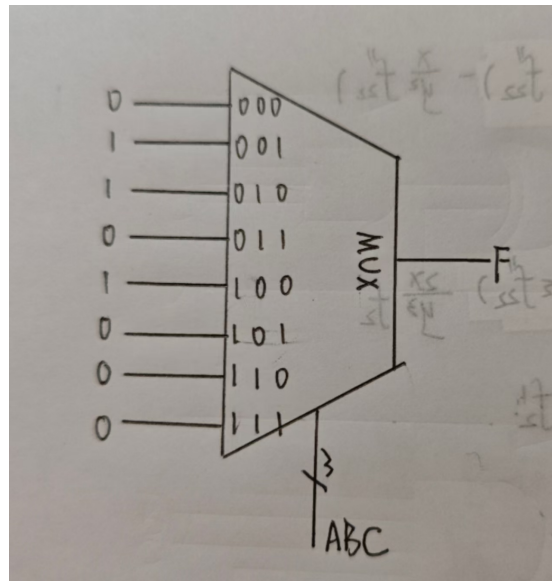


6.

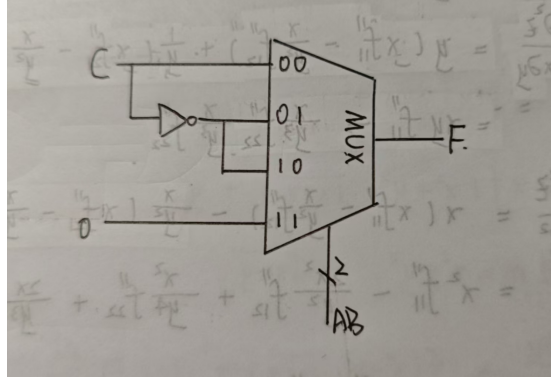


优先级顺序为 $I_0 > I_1 > I_2 > I_3 > I_4 > I_5 > I_6 > I_7$

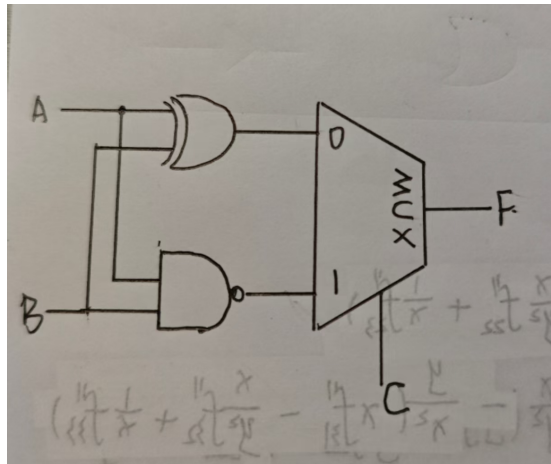
7. (a)



(b)

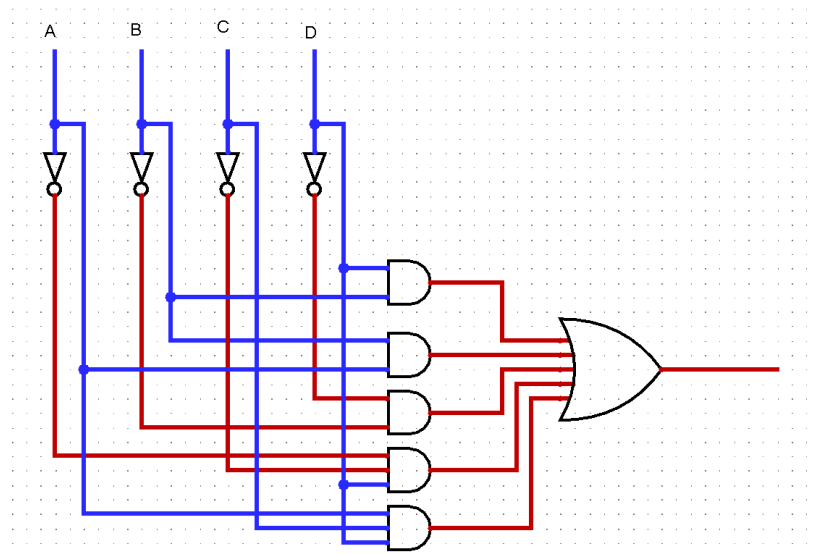


(c)



9. (1) 利用卡诺图进行化简得到逻辑表达式为 $F = B \cdot D + A \cdot B + \overline{B} \cdot \overline{D} + \overline{A} \cdot \overline{C} \cdot D + A \cdot C \cdot D$

(2)



(3) 不存在竞争冒险, $B \cdot D, A \cdot B, \bar{B} \cdot \bar{D}, A \cdot C \cdot D$ 各条路径的延迟相同, 所有信号都通过两个逻辑门。而对于 $\bar{A} \cdot \bar{C} \cdot D$, 经验证也不存在竞争冒险, 所以全体电路都不存在竞争冒险。

11.

	2.30a	2.30b	2.30c
传输延迟	95ps	125ps	75ps
最小延迟	25ps	45ps	25ps

图 2.30b 的传输延迟最长, 图 2.30c 的传输延迟最短。