

作业答案

题 1.10 解:

$$(2) \quad F = [(A\bar{B} + C)D + E]G$$

$$\bar{F} = [(\bar{A} + B)\bar{C} + \bar{D}] \cdot \bar{E} + \bar{G}$$

$$F' = [(A + \bar{B})C + D] \cdot E + G$$

$$(3) \quad F = \overline{A\bar{B} + C} + \overline{A + BC}$$

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

$$F' = (\overline{A + \bar{B}}) \cdot C \cdot \overline{A \cdot \overline{B + C}}$$

易错点

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题1.11解：

$$(3) \quad F = (A + \overline{B})(A + C) = \sum m(1,4,5,6,7) = \prod M(0,2,3) ;$$

$$\overline{F} = \sum m(0,2,3) ; \quad F' = \sum m(4,5,7) .$$

$$(4) \quad F = (\overline{B + C})(\overline{A + B}) = \sum m(1,5,6,7) = \prod M(0,2,3,4) .$$

$$\overline{F} = \sum m(0,2,3,4) ; \quad F' = \sum m(3,4,5,7) .$$

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题1.13解:

(1)

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

$$F = \overline{D} + AB + AC$$

(3)

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

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

(11)

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

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

(12)

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

$$\begin{aligned} F &= \overline{A}\overline{C}\overline{D} + \overline{A}BD + ABC + A\overline{B}\overline{D} \\ &= \overline{B}\overline{C}\overline{D} + \overline{A}\overline{B}\overline{C} + BCD + A\overline{C}\overline{D} \end{aligned}$$

或

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

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题1.15解: (3) $F = \overline{ABC} + \overline{A}BC + \overline{A}\overline{B}C$

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

① 化简求最简与或式

② 还原律 ③ 下面的非号反演律

题1.16解: (2)

$$F = (A + C)(\overline{A} + B + \overline{C})(\overline{A} + \overline{B} + C) \Longrightarrow F = \overline{\overline{\overline{A} + \overline{B} + C} + \overline{\overline{A} + C} + \overline{\overline{A} + B + \overline{C}}}$$

① 还原律 ② 下面的非号反演律

① 化简求最简
或与式



$$F = (\overline{B} + C)(A + C)(\overline{A} + B + \overline{C}) \Longrightarrow F = \overline{\overline{\overline{B} + C} + \overline{\overline{A} + C} + \overline{\overline{A} + B + \overline{C}}}$$

② 还原律 ③ 下面的非号反演律

练习题答案

1、将逻辑函数 $F(A,B,C,D) = \overline{\overline{A}\overline{B}\overline{D}} + BCD + ABD + \overline{\overline{A}\overline{B} \cdot \overline{C}D}$

化成最简与或表达式 ()。

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

2、将不完全确定逻辑函数 $F(A,B,C,D) = AB\overline{D} + \overline{B}CD + A\overline{C}\overline{D} + \overline{A}\overline{B}\overline{D} + \overline{B}C\overline{D}$, 且 $BD = 0$

化成最简与或表达式, 在这个最简与或式中有 (A) 个与项。

A、2 B、3 C、4 D、5

		CD			
		00	01	11	10
AB	00			1	1
	01		×	×	
	11	1	×	×	1
	10	1		1	1