

## Практическая работа №5

Веренёв А.А. (8871)

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Вариант №16

Дана функция:  $(A \wedge B \wedge \bar{C}) \vee (\bar{A} \wedge B \wedge D) \vee (\bar{C} \wedge \bar{D})$

№	A	B	C	D	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F	СДНФ	СКНФ
0	0	0	0	0	0	0	1	1	1	0
1	0	0	0	1	0	0	0	0	0	1
2	0	0	1	0	0	0	0	0	0	1
3	0	0	1	1	0	0	0	0	0	1
4	0	1	0	0	0	0	1	1	1	0
5	0	1	0	1	0	1	0	1	1	0
6	0	1	1	0	0	0	0	0	0	1
7	0	1	1	1	0	1	0	1	1	0
8	1	0	0	0	0	0	1	1	1	0
9	1	0	0	1	0	0	0	0	0	1
10	1	0	1	0	0	0	0	0	0	1
11	1	0	1	1	0	0	0	0	0	1
12	1	1	0	0	1	0	1	1	1	0
13	1	1	0	1	1	0	0	1	1	0
14	1	1	1	0	0	0	0	0	0	1
15	1	1	1	1	0	0	0	0	0	1

Таблица 1: Таблица истинности

Формулы:

СДНФ:  $F = (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge \bar{B} \wedge C \wedge D) \vee (\bar{A} \wedge B \wedge C \wedge D) \vee (A \wedge \bar{B} \wedge \bar{C} \wedge \bar{D}) \vee (A \wedge B \wedge \bar{C} \wedge \bar{D}) \vee (A \wedge B \wedge \bar{C} \wedge D)$

СКНФ:

$F = (A \wedge B \wedge C \wedge \bar{D}) \vee (A \wedge B \wedge \bar{C} \wedge D) \vee (A \wedge B \wedge \bar{C} \wedge \bar{D}) \vee (A \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge B \wedge C \wedge \bar{D}) \vee (\bar{A} \wedge B \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge B \wedge \bar{C} \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge \bar{D})$

$F = \sum_{i=0}^{15} (0, 4, 5, 7, 8, 12, 13)$

$F = \prod_{i=0}^{15} (0, 1, 4, 5, 6, 9, 12, 13, 14)$

## Карты карно

СДНФ:

Figure 1 shows a 4x4 grid representing a 2D lattice. The grid is labeled with indices  $A$  (rows) and  $B$  (columns). The values in the grid are: Row 0: [0, 1, 3, 2]; Row 1: [4, 5, 7, 6]; Row 2: [12, 13, 15, 14]; Row 3: [8, 9, 11, 10]. The values 0, 4, 5, 7, 8, 12, 13, and 15 are highlighted in red boxes. The grid is surrounded by lines labeled  $A$ ,  $B$ , and  $D$ , with a  $C$  label at the top right.

CKHΦ:

0	1	3	2
4	5	7	6
12	13	15	14
8	9	11	10