Практическая работа №5

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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_1	F_2	F_3	F	СДНФ	СКНФ
0	0	0	0	0	0	0	1	1	$A \vee B \vee C \vee D$	0
1	0	0	0	1	0	0	0	0	0	$A \vee B \vee C \vee D$
2	0	0	1	0	0	0	0	0	0	$A \vee B \vee C \vee D$
3	0	0	1	1	0	0	0	0	0	$A \vee B \vee C \vee D$
4	0	1	0	0	0	0	1	1	$A \vee B \vee C \vee D$	0
5	0	1	0	1	0	1	0	1	$A \vee B \vee C \vee D$	0
6	0	1	1	0	0	0	0	0	0	$A \vee B \vee C \vee D$
7	0	1	1	1	0	1	0	1	$A \vee B \vee C \vee D$	0
8	1	0	0	0	0	0	1	1	$A \vee B \vee C \vee D$	0
9	1	0	0	1	0	0	0	0	0	$A \vee B \vee C \vee D$
10	1	0	1	0	0	0	0	0	0	$A \vee B \vee C \vee D$
11	1	0	1	1	0	0	0	0	0	$A \vee B \vee C \vee D$
12	1	1	0	0	1	0	1	1	$A \vee B \vee C \vee D$	0
13	1	1	0	1	1	0	0	1	$A \vee B \vee C \vee D$	0
14	1	1	1	0	0	0	0	0	0	$A \vee B \vee C \vee D$
15	1	1	1	1	0	0	0	0	0	$A \vee B \vee C \vee D$

Таблица 1: Таблица истинности

Формулы:

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

СКНФ:

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

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

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

Карты карно

СКНФ:

	$\overline{}$ C		
	$\overline{}$ D		
1	0	0	0
1	1	1	0
1	1	0	0
1	0	0	0

B

A

СКНФ:

	$\overline{}$ C		
	$\overline{}$ D		
0	1	1	1
0	0	0	1
0	0	1	1
0	1	1	1

B

A