

Практическая работа №5

студент: Пономарев В.В. группы 8871

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Дана функция (ДНФ):

$$F = (B\bar{C}D) + (A\bar{D}) + (BC)$$

СКНФ

$$(A+B+C+D)(A+B+C+\bar{D})(A+B+\bar{C}+D)(A+B+\bar{C}+\bar{D})(A+\bar{B}+C+D)(\bar{A}+B+C+\bar{D})(\bar{A}+B+\bar{C}+\bar{D})$$

СДНФ

$$\bar{A}\bar{B}\bar{C}D + \bar{A}B\bar{C}\bar{D} + \bar{A}BCD + A\bar{B}\bar{C}\bar{D} + A\bar{B}C\bar{D} + AB\bar{C}\bar{D} + AB\bar{C}D + ABC\bar{D} + ABCD$$

Карты Карно

| | | → CD | | | |
|-------|----|------|----|----|----|
| AB/CD | | 00 | 01 | 10 | 11 |
| ↓ AB | 00 | 0 | 0 | 0 | 0 |
| | 01 | 0 | 1 | 1 | 1 |
| | 10 | 1 | 1 | 1 | 1 |
| | 11 | 1 | 0 | 0 | 1 |

Таблица истинности

| в 16-тичной системе | аргументы | | | | Логические операции | | | | | | | |
|---------------------|-----------|---|---|---|---------------------|-----------------|------------------|----------------|-----------------|------------------------------------|------|---|
| | A | B | C | D | \overline{C} | $B\overline{C}$ | $B\overline{C}D$ | \overline{D} | $A\overline{D}$ | $(B\overline{C}D)V(A\overline{D})$ | BC | $(B\overline{C}D)V(A\overline{D})V(BC)$ |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 5 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 7 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 9 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 11 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| 13 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 14 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 15 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |