Sistemas Digitais

24/09/2018 - T

$X + \bar{X}.Y = X + Y$ T11

$F = A.B + B.E.F + \bar{A}.C.D + \bar{B}CD$

$= A.B + B.E.F + C.D(\bar{A}+\bar{B})$ T8

$= A.B + B.E.F + C.D(\bar{A.B})$ T9

$= \underbrace{A.B}_{x} + \underbrace{B.E.F}_{\dots} + \underbrace{C.D}_{y} + \underbrace{(\bar{A.B})}_{\bar{x}}$ T11

$= A.B + C.D + B.E.F$

→ Tabelas de verdade

$F = \bar{A}\bar{B}C + \bar{A}B\bar{C} + AB\bar{C}$

n = 3

| | A | B | C | F = $\bar{A}\bar{B}C + \bar{A}B\bar{C} + AB\bar{C}$ |
|---|---|---|---|---|
| ④ | 0 | 0 | 0 | 0 = $\bar{0}\bar{0}0 + \bar{0}0\bar{0} + 00\bar{0}$ = 1.1.0 + 1.0.1 + 0.0.1 = 0 |
| ① | 0 | 0 | 1 | 1 = $\bar{0}\bar{0}1 + \bar{0}0\bar{1} + 00\bar{1}$ = 1 |
| ② | 0 | 1 | 0 | 1 = $\bar{0}1\bar{0} + \bar{0}1\bar{0} + 01\bar{0}$ = 1 |
| ⑤ | 0 | 1 | 1 | 0 = $\bar{0}1\bar{1} + \bar{0}1\bar{1} + 01\bar{1}$ = 0 |
| ⑥ | 1 | 0 | 0 | 0 = … |
| ⑦ | 1 | 0 | 1 | 0 = … |
| ③ | 1 | 1 | 0 | 1 = … |
| ⑧ | 1 | 1 | 1 | 0 = $\bar{1}\bar{1}1 + \bar{1}1\bar{1} + 11\bar{1}$ = 0 |

N

$N = 2^n = 2^3 = 8$

$F = \underbrace{\bar{A}\bar{B}C}_{①} + \underbrace{\bar{A}B\bar{C}}_{②} + \underbrace{AB\bar{C}}_{③}$ ← Soma de produtos (onde for zero, negar)

$F = \underbrace{(A+B+C)}_{④}.\underbrace{(A+\bar{B}+\bar{C})}_{⑤}.\underbrace{(\bar{A}+B+C)}_{⑥}.\underbrace{(\bar{A}+B+\bar{C})}_{⑦}.\underbrace{(\bar{A}+\bar{B}+\bar{C})}_{⑧}$ ← Produto de somas (onde for 1, negar)