(7) Truth Table to Symbolic

* Minterm for a function is an expression that evaluates to logic 1 for a single input & ϕ for every other input.

Ex

A	B	C	F(A,B,C)	minterm	symbol	Maxterm	symbol
0	0	0	0	a'b'c'	m_0	a+b+c	M_0
0	0	1	1	a'b'c	m_1	a+b+c'	M_1
0	1	0	1	a'bc'	m_2	a+b'+c	M_2
0	1	1	1	a'bc	m_3	a+b'+c'	M_3
1	0	0	1	ab'c'	m_4	a'+b+c	M_4
1	0	1	0	ab'c	m_5	a'+b+c'	M_5
1	1	0	0	abc'	m_6	a'+b'+c	M_6
1	1	1	1	abc	m_7	a'+b'+c'	M_7

minterm trick = to form a minterm take the product of var when its 1 or negation when its ϕ

Canonical SOP = OR together minterms where function equals 1.

$$F(a,b,c) = \underset{m_1}{a'b'c} + \underset{m_2}{a'bc'} + \underset{m_3}{a'bc} + \underset{m_4}{ab'c'} + \underset{m_7}{abc}$$

$$F(0,1,1) = 0 + 0 + 1 + 0 + 0 = 1$$

$$F(1,0,1) = 0 + 0 + 0 + 0 + 0 = 0$$

$$F(a,b,c) = \sum m(1,2,3,4,7)$$

* Maxterm for a function is an expression that evaluates to logic 0 for a single input and 1 for every other input.

Canonical POS = AND together maxterms where function equals 0.

$M_0 \quad M_5 \quad M_6$

$F(a,b,c) = (a+b+c)(a'+b+c')(a'+b'+c)$

$F(0,1,1) = 1 \cdot 1 \cdot 1 = 1$

$F(1,0,1) = 1 \cdot 0 \cdot 1 = 0$

$F(a,b,c) = \Pi M(0,5,6)$

Lab 3

4 modules
- ASSIGN
- CASE
- INSTANTION

} Rock, Paper Scissors