

# DE TUT-III

$$S\bar{P} = S\bar{P}X + S\bar{P}\bar{X} : 1 \text{ mod}$$

$$\bar{S}P = \bar{S}PX + \bar{S}P\bar{X} : 2 \text{ mod}$$

$$\textcircled{1} A + [B + (AC)] + D \Rightarrow \text{dual } S\bar{P}X + \bar{S}PX : 8 \text{ mod}$$

$$A \cdot (B \cdot (A+C)) \cdot D$$

$$YX + \bar{S}P + S\bar{P} = 902$$

$$\textcircled{2} m_3 + m_6 \quad (\bar{P} + \bar{X}) \cdot (S + \bar{P}) \cdot (\bar{S} + P) = 209$$

$$m_3 = 011 \Rightarrow \bar{X} \cdot Y \cdot Z \quad [M'J + M'J + MJ + 1]$$

$$m_6 = 110 \Rightarrow X \cdot Y \cdot \bar{Z} \quad [MJ + 1]$$

$$F = (\bar{X} \cdot Y \cdot Z) + (X \cdot Y \cdot \bar{Z})$$

$$[(M'M'J + J'M'JJ) + (M'MJ + M'JJ)]$$

$$[(0+0) + (0+0)]$$

$$0 = 0$$

			A	B	
X	Y	Z	$\bar{X} \cdot Y \cdot Z$	$X Y \bar{Z}$	$F = A + B$
0	0	0	0	1	1
0	0	1	0	0	0
0	1	0	0	0	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	1	1
1	1	1	0	0	0

③  $F(x, y, z) = \sum(1, 2, 5, 6, 7)$

	yz 00	01	11	10
x 0	0	1	0	1
1	0	1	1	1

pair 1:  $\bar{x}\bar{y}z + x\bar{y}z \Rightarrow \bar{y}z$

pair 2:  $\bar{x}y\bar{z} + x y \bar{z} \Rightarrow y\bar{z}$

pair 3:  $x y z + x \bar{y} z \Rightarrow x y$

SOP =  $\bar{y}z + y\bar{z} + xy$

POS =  $(y + \bar{z}) \cdot (\bar{y} + z) \cdot (\bar{x} + y)$

④  $[1 + LM + \underline{LM'} + \underline{L'M}] \cdot [(L + M')(L'M) + L'M'(L + M)]$

$1 + LM = 1$

1.  $[(L + M')(L'M) + L'M'(L + M)]$

1.  $[LL'M + LMM'] + [L'L'M' + L'M'M]$

1.  $[(0 + 0) + (0 + 0)]$

1.  $0 = 0$

$$\overline{A}B + B\overline{A} = \overline{A}B + B\overline{A} + BA = \overline{A}B + B\overline{A} + BA$$

$$\begin{aligned} \textcircled{5} \quad & \overline{A}BC + \overline{A}B\overline{C} + A\overline{B}C + A\overline{B}\overline{C} + \overline{A}B\overline{C} + \overline{A}B\overline{C} + \overline{A}B\overline{C} + \overline{A}B\overline{C} \\ & \quad \quad \quad \overline{A}B \quad \quad + \quad \quad \overline{A}\overline{B} \quad \quad + \quad \quad \overline{A}\overline{B} \quad \quad + \quad \quad \overline{A}\overline{B} \\ & \quad \quad \quad A + \overline{A} \\ & \quad \quad \quad 1 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & f(A, B) = \sum m(0, 2, 3) \\ & (\overline{A}\overline{B} + A\overline{B}) + (A\overline{B} + AB) \\ & \quad \quad \quad \overline{B} + A \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & \overline{A}BC + \overline{B}CD + AC + \overline{A}\overline{B}C\overline{D} \\ & \overline{A}BC + AC + \overline{B}CD + \overline{A}\overline{B}C\overline{D} \\ & C(\overline{A}B + A) + \overline{B}C(D + \overline{A}\overline{D}) \\ & C((A + \overline{A})(A + B)) + \overline{B}C(D + \overline{D}) + (D + \overline{A}) \\ & C(A + B) + \overline{B}C(D + A) \\ & AC + CB + \overline{B}CD + \overline{B}C\overline{A} \\ & BC + \overline{B}CD + \overline{B}C\overline{A} + AC \\ & C(B + \overline{B}D) + C(\overline{B}\overline{A} + A) \\ & C(B + D) + C(\overline{B} + A) \\ & BC + BD + \overline{B}C + CA \\ & C + BD + CA \\ & C(1 + A) + BD \\ & C + BD \end{aligned}$$