DE TUT- III

① $A + [B + (AC)] + D \Rightarrow$ dual

$A . (B . (A+C)) . D$

② $m_3 + m_6$

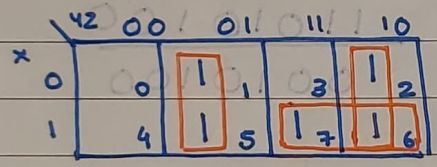
$m_3 = 011 \Rightarrow \bar{x} . y . z$

$m_6 = 110 \Rightarrow x . y . \bar{z}$

$F = (\bar{x} . y . z + x . y . \bar{z})$

			A	B	
X	Y	Z	$\bar{X}.Y.Z$	$XY\bar{Z}$	F = A+B
0	0	0	0	0	0
0	0	1	0	0	0
0	1	0	0	0	0
0	1	1	1	0	1
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 $F(x,y,z) = \Sigma(1,2,5,6,7)$



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

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

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

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

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

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

$1 + LM = 1$

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

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

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

$1.0 = 0$

⑤ $AB\underline{C} + AB\underline{\bar{C}} + A\bar{B}\underline{C} + A\bar{B}\underline{\bar{C}} + \bar{A}B\underline{C} + \bar{A}B\underline{\bar{C}} + \bar{A}\bar{B}\underline{\bar{C}} + \bar{A}\bar{B}\underline{C}$

$A\underline{B} + A\underline{\bar{B}} + \bar{A}\underline{B} + \bar{A}\underline{\bar{B}}$

$A + \bar{A}$

1

⑥ $f(A, B) = \Sigma m(0, 2, 3)$

$(\bar{A}\bar{B} + A\bar{B}) + (A\bar{B} + AB)$

$\bar{B} + A$

⑦ $\bar{A}BC + \bar{B}CD + AC + \bar{A}\bar{B}C\bar{D}$

$\bar{A}BC + AC + \bar{B}CD + \bar{A}\bar{B}C\bar{D}$

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

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

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

$AC + CB + \bar{B}CD + \bar{B}C\bar{A}$

$BC + \bar{B}CD + \bar{B}C\bar{A} + AC$

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

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

$BC + BD + \bar{B}C + CA$

$C + BD + CA$

$C(1+A) + BD$

$C + BD$