



第 4 章

9. 下列表示中应用德摩根定理

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

10. 同第 9 題

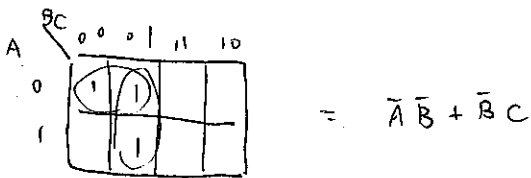
(a) $\overline{A\bar{B}(C+\bar{D})} = \overline{A\bar{B}} + \overline{C+\bar{D}} = (\bar{A}+B) + (\bar{C}D)$

(b) $\overline{AB(CD+EF)} = \bar{A}\bar{B} + \overline{CD+EF} = \bar{A}\bar{B} + (\bar{C}\bar{D})(\bar{E}\bar{F}) = (\bar{A} + \bar{B})(\bar{C} + \bar{D})(\bar{E} + \bar{F})$

(c) $\overline{A+B+C+D} + \overline{ABC\bar{D}} = \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A} + \bar{B} + \bar{C} + \bar{D}$

38. 利用卡諾圖找出各表示式的最小 SOP

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

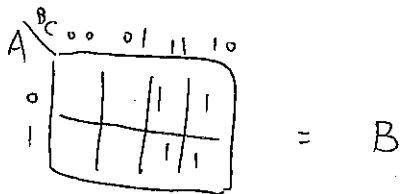


(b) $Ac(\bar{B}+C) = A\bar{B}c + AC$

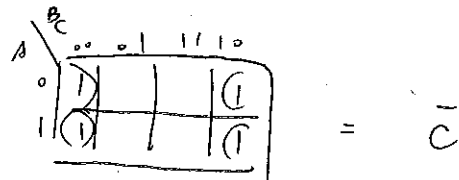


(c) $\bar{A}(Bc+B\bar{c}) + A(Bc+B\bar{c})$

$= \bar{A}Bc + \bar{A}B\bar{c} + ABc + AB\bar{c}$

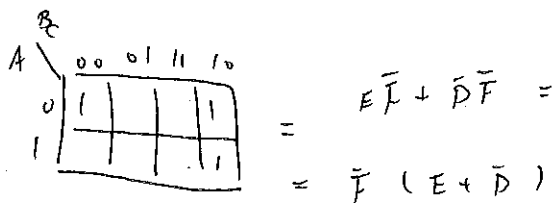


(d) $\bar{A}\bar{B}\bar{c} + A\bar{B}\bar{c} + \bar{A}B\bar{c} + A\bar{B}c$



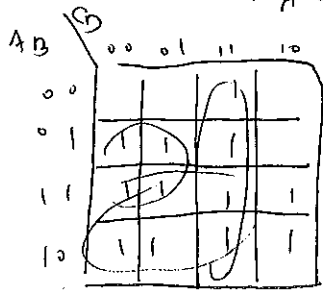
39. 化簡最小 SOP

(c) $DE\bar{F} + \bar{D}E\bar{F} + \bar{D}\bar{E}\bar{F}$



42. 7/39

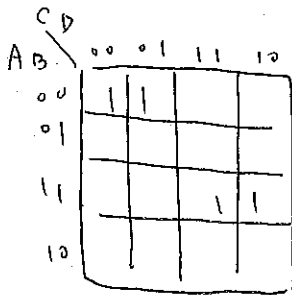
$$a) A + B\bar{C} + CD = ABCD + \bar{A}\bar{B}CD + AB\bar{C}D + ABC\bar{D} + ABC\bar{D} + \bar{A}B\bar{C}D + AB\bar{C}\bar{D} + \bar{A}B\bar{C}\bar{D} + ABCD + \bar{A}BCD + A\bar{B}CD + \bar{A}\bar{B}CD$$



$$= A + B\bar{C} + CD$$

b)

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

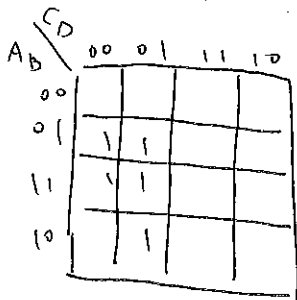


$$= \bar{A}\bar{B}\bar{C} + ABC$$

c)

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

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



$$= B\bar{C} + A\bar{C}D$$

8.

a) $\overline{AB + CD} + \overline{EF} = AB + CD + \overline{EF}$ Ans $\bar{\bar{A}} = A$ $\overline{AB + CD} = AB + CD$

b) $A\bar{A}B + A\bar{B}\bar{C} + AB\bar{B} = A\bar{B}\bar{C}$ Ans $A\bar{A} = 0$ $A\bar{B} = 0$

c) $A(B\bar{C} + B\bar{C}) + AC = A(B\bar{C}) + AC$ Ans $B\bar{C} + B\bar{C} = B\bar{C}$

d) $AB(c + \bar{c}) + AC = AB + AC$ Ans $c + \bar{c} = 1$

e) $\bar{A}B + A\bar{B}C = \bar{A}B$ Ans $\bar{A}B(1 + C)$ $C + 1 = 1$