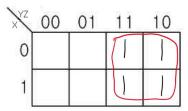
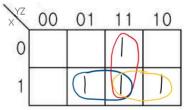
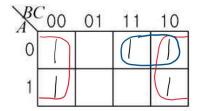
- 1. 다음 불 식을 3변수 카르노 맵을 이용하여 간소화하여라.
- $F(X,Y,Z) = \sum m(2,3,6,7)$ = Y



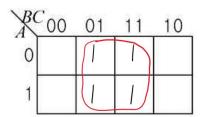
- $F(X,Y,Z) = \sum m(3,5,6,7)$ = XY + YZ + ZX



 $F(A,B,C) = \sum m(0,2,3,4,6) = B+$

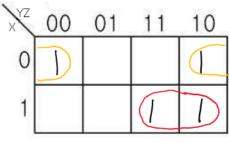


- $F(A,B,C) = \sum m(1,3,5,7)$
- = C



$$XY + Y \overline{Z} + \overline{X} \overline{Y} \overline{Z}$$

= $XY(2+\overline{Z}) + (X+\overline{X})Y\overline{Z} + \overline{X} \overline{Y} \overline{Z}$
= $XYZ + XYZ + XYZ + \overline{X}YZ + \overline{X} \overline{Y} \overline{Z}$
= $XYZ + XYZ + \overline{X}YZ + \overline{X} \overline{Y} \overline{Z}$
= $ZM(0,2,6,1)$



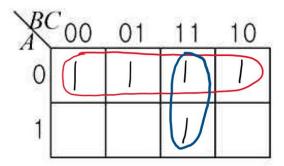
©
$$f(A,B,C) = --+BC+-B = -+BC$$

$$\overline{A} \overline{B} + BC + \overline{A}B\overline{C}$$

$$= \overline{A} \overline{B} (C + \overline{C}) + (A + \overline{A})BC + \overline{A}B\overline{C}$$

$$= \overline{A} \overline{B} C + \overline{A} \overline{B} \overline{C} + ABC + \overline{A}BC + \overline{A}B\overline{C}$$

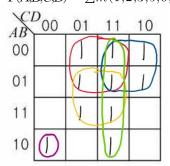
$$= \Sigma m(0, 1, 2, 3, 1)$$

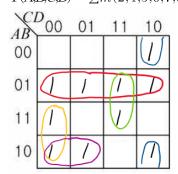


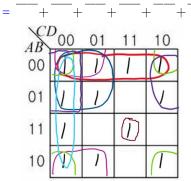
- 2. 다음 4변수 카르노 맵을 이용하여 간소화하여라.
- ① $F(A,B,CD) = \sum m(0,2,4,5,6,7,8,10,13,15) = B+BD+$

| C | ח | FISC. (A) | 08.00 | 0.0000000 |
|----|----|-----------|------------|-----------|
| AB | 00 | 01 | 11 | 10 |
| 00 | | | | |
| 01 | | Ī | 1 | A |
| 11 | | 1 | | |
| 10 | | | - 301 No N | |

 $F(A,B,C,D) = \sum m(1,2,3,5,6,7,8,11,13,15) = C + D + D + D + D + D$







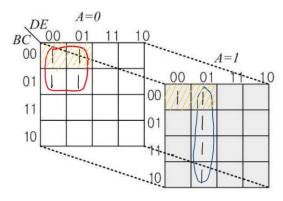
 $F(A,B,C,D) = \sum_{m} m(2,5,7,8,10,12,13,15)$ = A + BD + C

| 2.1 | | | | |
|-----|-------------|----|----|----|
| AB | $^{D}_{00}$ | 01 | 11 | 10 |
| 00 | | | | |
| 01 | | T | | |
| 11 | | U | J | |
| 10 | | | | M |

⑥
$$F(A,B,C,D) = \sum m(0,1,2,4,6,7,8,9,10,11,12,15)$$

- *. A=0, A=1간 묶인 격자는 같은 색깔의 빗금으로 표시하였습니다.
- 3. 다음 논리식을 5변수 카르노 맵으로 최소화하여라.

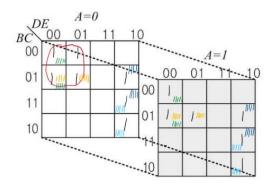
①
$$F(A,B,C,D,E) = \sum m(0,1,4,5,16,17,21,25,29)$$



②
$$F(A,B,C,D,E) = \overline{C} + \overline{C} + \overline{C} + \overline{C} + \overline{C} + \overline{D} + \overline{E}$$

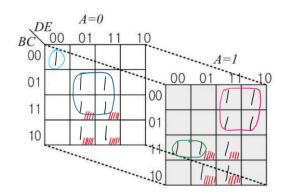
$$= \overline{C} + BD + \overline{C} + CD + \overline{C} +$$

 $= \overline{A} \overline{B} C(D+\overline{D})\overline{E} + \overline{A} \overline{B} \overline{C}\overline{D}(E+\overline{E}) + (A+\overline{A})\overline{B}(C+\overline{C})\overline{D}\overline{E} + (A+\overline{A})\overline{B}C\overline{D}(E+\overline{E}) + (A+\overline{A})(B+\overline{B})CD\overline{E} + (A+\overline{A})B(C+\overline{C})D\overline{E}$ $= \sum m(o, 1, 4, 5, 6, 10, 14, 16, 20, 21, 22, 26, 30)$



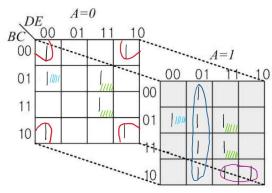
 $(3) F(A,B,C,D,E) = \sum m(0.5,7,9.11,13,15,18,19,22,23,25,27,28,29,31)$

$$= BE + A^{T}D + CE + ABC^{T} + CE$$



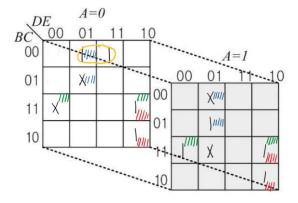
 $F(A,B,C,D,E) = \sum m(0,2,4,7,8,10,15,17,20,21,23,25,2\underline{6},27,29,31)$

$$=$$
 $+A$ $E+CE+AB$ $D+$ C



 $F(A,B,C,D,E) = \sum m(1,3,10,14,21,26,28,30) + \sum d(5,12,17,29)$

$$= \overline{E} + B\overline{D} + B\overline{C} + \overline{E}$$



 $F(A,B,C,D,E) = \sum m(0,1,2,4,5,6,10,13,14,18,21,22,24,266,29,30)$

$$= \overline{D} + \overline{C} E + AB$$

