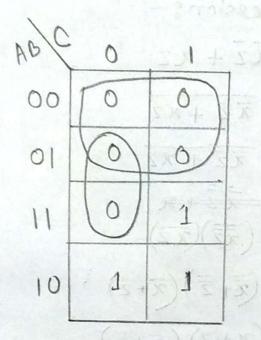
Assignment 7 miles and filling

Use a k map to minimize the following:-



Simplified POS expression:

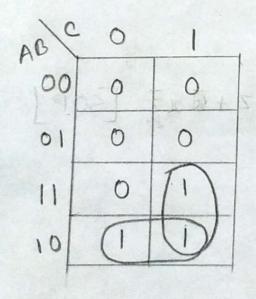
$$\overrightarrow{F} = \overrightarrow{A} + \overrightarrow{BC}$$

$$F = \overrightarrow{A} + \overrightarrow{BC}$$

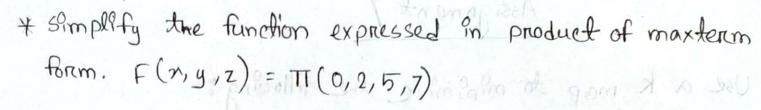
$$= \overrightarrow{A} (\overrightarrow{BC})$$

$$= A(\overrightarrow{B} + \overrightarrow{C})$$

POLLENDRONS !



Simplified SOP expression:-



no. of manteron or sum 3401A) (5+0+A) (9+0+A)

my 2	0	1	
00	00	1 209	
01	20	3	
(1	6	7/0/11	-
10	4	5 0	1
		(Dia)A	

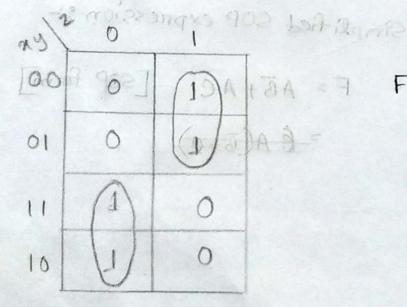
$$\Rightarrow$$
 pos expression: -
$$\bar{F} = \bar{\chi}\bar{z} + \bar{\chi}\bar{z}$$

$$F = \chi_z + \chi_z$$

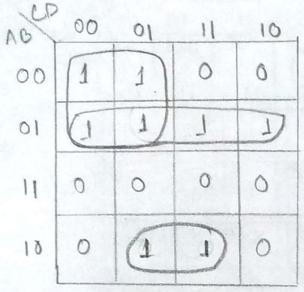
$$\frac{1}{\overline{F}} = \frac{\overline{\chi} \overline{z} + \chi z}{\overline{\chi} \overline{z} + \chi z}$$

$$= \frac{\overline{z}}{\overline{z}+x}$$
$$= (\overline{z})(\overline{z})$$

$$= \left(\overline{\overline{\chi}} + \overline{\overline{z}}\right) \left(\overline{\chi} + \overline{z}\right)$$



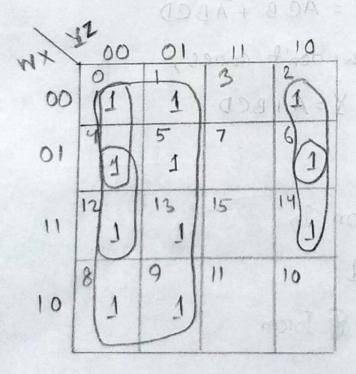
+ Use K-map to minimize the following expression ?
ABCD + ABCD



simplified sop expression:-

* simplify the function expressed in Sum of mintern :- $F(\omega, X, Y, Z) = \sum (0, 1, 2, 4, 5, 6, 8, 9, 12, 13, 14)$

no. of menterns = 11



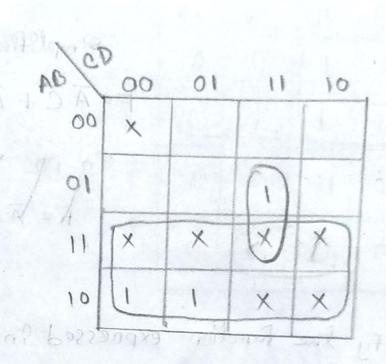
. . F= Y+ W & Z + X & Z

mas to techniq

6

* Don't care conditions!

	STARLARE	196 6	TABERLAGED
Inputs		Output	
ABCD		Y	
	0 0 0 0	X	LON YOU
	0 0 0 1	-0	00 04
	0010	0	00 x
	0011	6.0	N 90 0
	0100/	0	/ 91
	0101	0	DA = A
	0110	0	11 X
	0 1 1 1	1	10/1
	10000	70 (m)	expecsed in
	1001	di	1, 5, 6, 2, 3, 7, 11, 19
	1010	×	Without
	1011	X	V = 1
	1100	×	1-,
	1101	X	with d
	1110	A CONTRACT OF THE PARTY OF THE	+ T = 4 - X =
	1111	X	
		CONTRACTOR STATE OF THE PARTY O	The state of the s

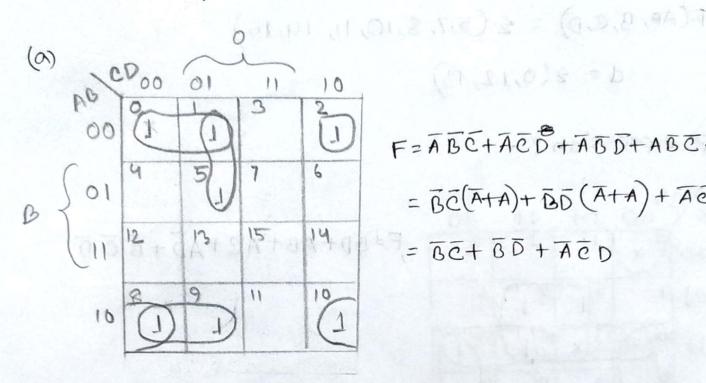


Without don't carres, Y = ACB + ABCD With don't cares, Y=A+BCD

* Simplify the boolean function in

- (a) sum of product and
- (6) Product of Sum & form

$$(27)$$
 $F(A,B,C,D) = $(0,1,2,5,8,9,10)$$



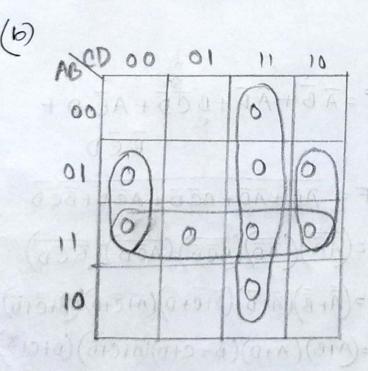
$$F = \overline{A}\overline{B}C + \overline{A}\overline{C}D + \overline{A}\overline{B}D + \overline{A}\overline{B}C + \overline{A}\overline{B}D$$

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

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

(0,11,0)8 = b

In product of maxterims, I can be expressed as F(A,B,C,D)= TT(3,4,6,7,11,12,13,14,15)



$$F = CD + AB + B\overline{D}$$

$$F = CD + AB + B\overline{D}$$

$$= (\overline{CD})(\overline{AB})(\overline{G}\overline{D})$$

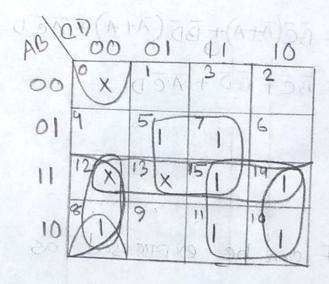
$$= (\overline{C} + \overline{D})(\overline{A} + \overline{B})(\overline{C} + \overline{D})$$

* Exercise:

$$F(AB, B, C, D) = £(5,7,8,10,11,14,15)$$

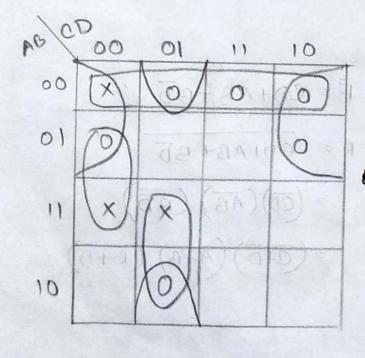
 $d = £(0,12,13)$

Sop expression :-



F=BD+AB+AC+AD+BED

POS expression:



$$F = \overline{A}\overline{B} + \overline{A}\overline{D} + B\overline{C}\overline{D} + A\overline{C}D + \overline{B}\overline{C}\overline{D}$$

$$= (\overline{A}\overline{B})(\overline{A}\overline{D})(\overline{G}\overline{C}\overline{D})(\overline{A}\overline{C}D)(\overline{B}\overline{C}D)$$

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

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