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ECE 218

Assignment - 5

4.28) b) $F_1 = (y'+z)z$

$F_2 = y'z' + x'y + yz'$

$F_3 = (x+y)z$

$F_1 = (y'+x)z$

$= zy' + zz$

$= (x+x')y'z + x(y+y')z$

$= xy'z + x'y'z + xyz + xy'z$

$= m_5 + m_1 + m_7 + m_4$

$F_1 = \Sigma(1,5,7)$

$F_2 = y'z' + x'y + yz'$

$= (x+x')y'z' + x'y(z+z') + (z+x')yz'$

$= xy'z' + x'y'z' + x'yz + x'yz' + xyz' + x'yz'$

$= m_4 + m_0 + m_3 + m_2 + m_6 + m_2$

$F_2 = \Sigma(0,2,3,4,6)$

$F_3 = (x+y)z$

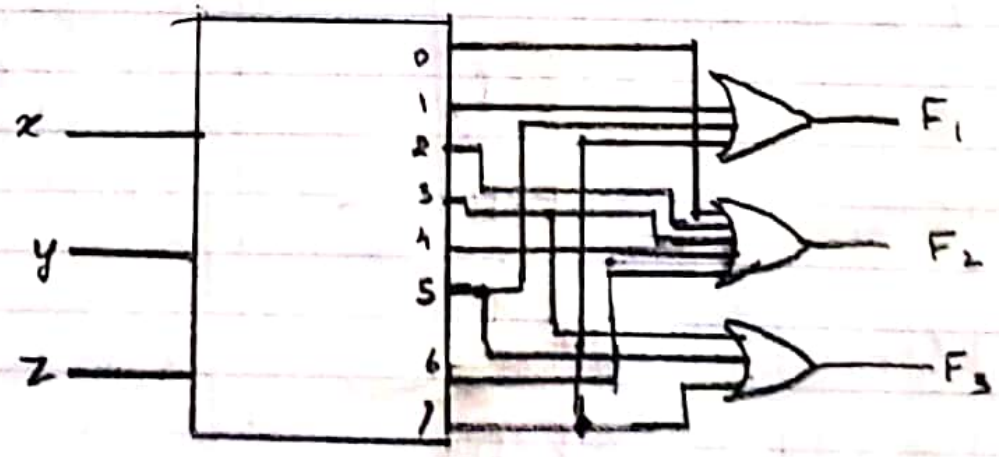
$= xz + yz$

$= (y+y')zz + (x+x')yz$

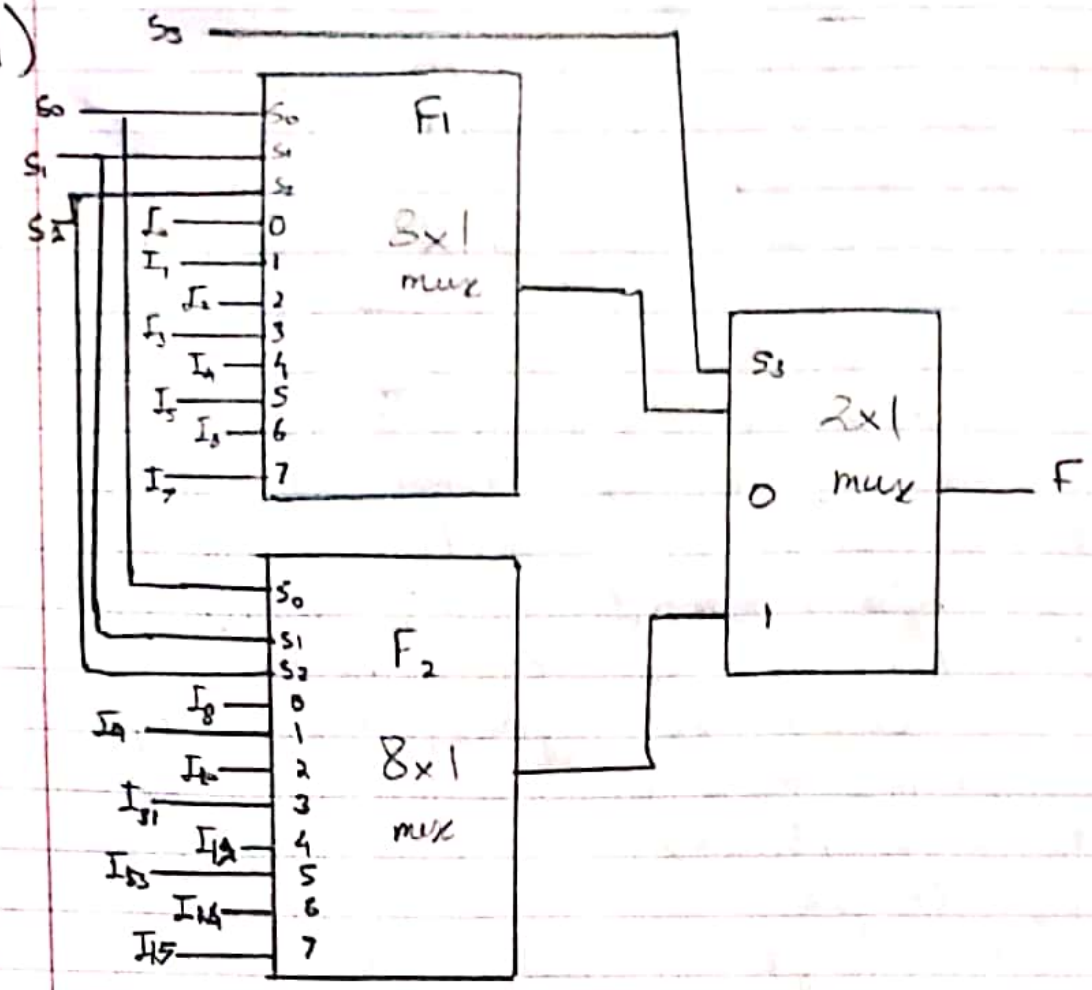
$= xyz + xy'z + xyz + x'yz$

$= m_7 + m_5 + m_2 + m_3$

$F_3 = \Sigma(3,5,7)$



4.31)



4.32) b) $F(A,B,C,D) = \pi(2,6,11)$

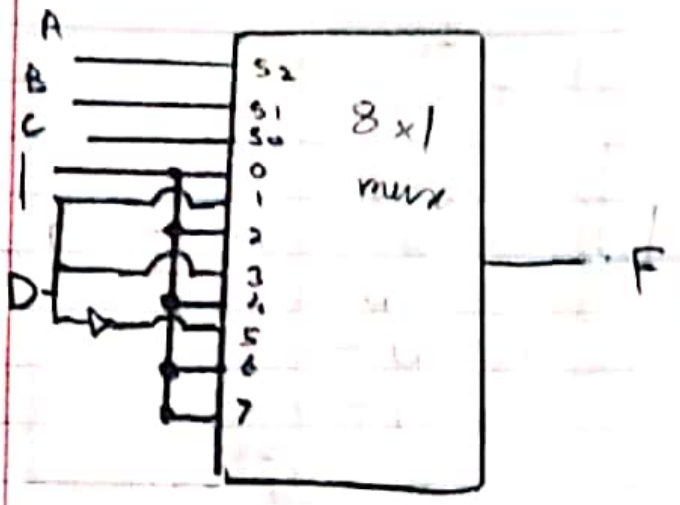
$= \Sigma(0,1,3,4,5,7,8,9,10,12,13,14,15)$

A	B	C	D	F	
0	0	0	0	1	F=1
0	0	0	1	1	
0	0	1	0	0	F=D
0	0	1	1	1	
0	1	0	0	1	F=1
0	1	0	1	1	
0	1	1	0	0	F=D
0	1	1	1	1	

(I)

A	B	C	D	F	
1	0	0	0	1	F=1
1	0	0	1	1	
1	0	1	0	1	F=D'
1	0	1	1	0	
1	1	0	0	1	F=1
1	1	0	1	1	
1	1	1	0	1	F=1
1	1	1	1	1	

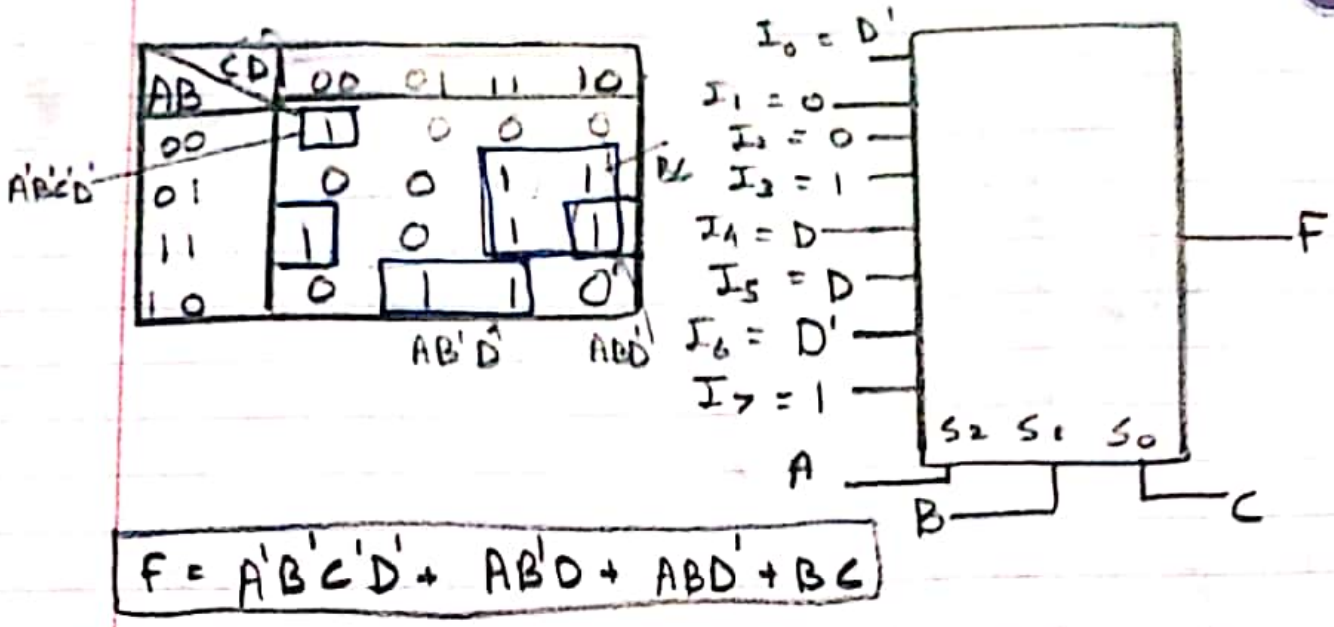
(II)



4.34) b) $I_1 = I_2 = 0$; $I_3 = I_7 = 1$; $I_4 = I_5 = D$; $I_0 = I_6 = D'$

	A	B	C	D	F	Decimal
$I_1 = 0$	0	0	1	0	0	2
	0	0	1	1	0	3
$I_2 = 0$	0	1	0	0	0	4
	0	1	0	1	0	5
$I_3 = 1$	0	1	1	0	1	6
	0	1	1	1	1	7
$I_7 = 1$	0	1	1	0	1	14
	0	1	1	1	1	15
$I_4 = D$	1	0	0	0	0	8
	1	0	0	1	1	9
$I_5 = D$	1	0	1	0	0	10
	1	0	1	1	1	11
$I_0 = D'$	D	0	0	0	1	0
	D	0	0	1	0	1
$I_6 = D'$	1	1	0	0	1	12
	1	1	0	1	0	13

$$F(A, B, C, D) = \Sigma(0, 6, 7, 9, 11, 12, 14, 15)$$



$$F = A'B'C'D' + AB'D + ABD' + BC$$