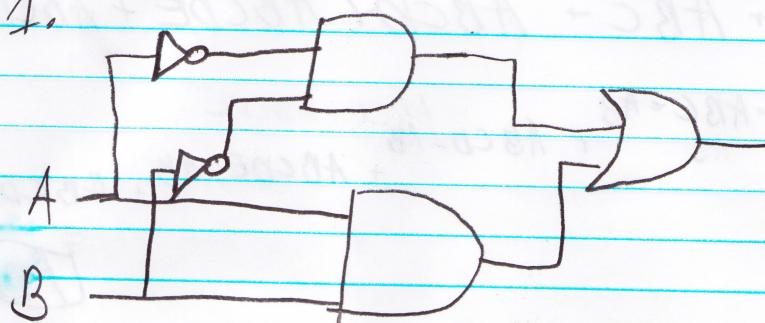


# CSC 9240 HW#2

Wasfi  
9/12/16

2a

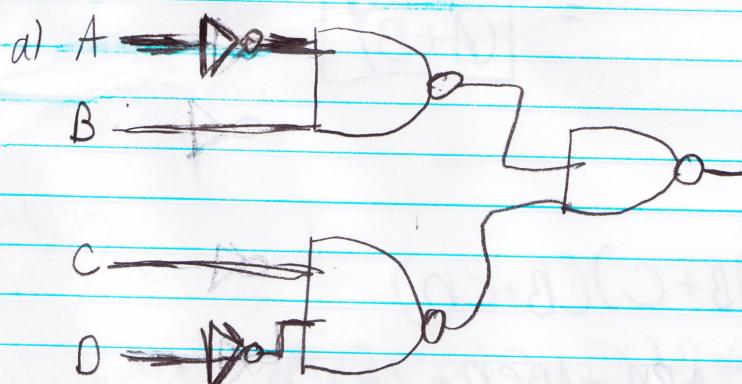
1.



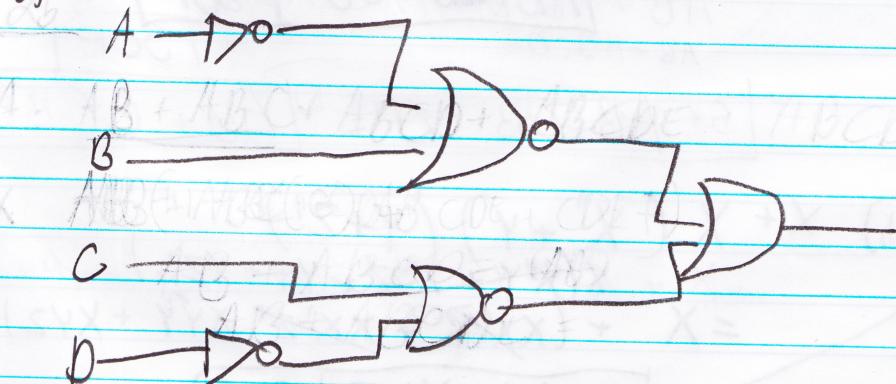
2.  $F = AB' + C'D$

0	0
1	0
0	1
1	1

a)



b)



$$x + xy = x$$

2b

$$1. AB + ABC + ABCD + ABCDE + ABCDEF$$

$$AB + ABC = AB \quad \text{L.S.} \quad + ABCD = AB \quad \text{L.S.} \quad + ABCDE = AB \quad \text{L.S.}$$

$$+ ABCDEF = AB$$

AB

$$2. (A+B)' (C+D+E)' + (A+B)' \cdot (C+D+E)' \quad \begin{matrix} \text{Absorption law} \\ x + xy = x \end{matrix}$$

$$(A+B)' + (A+B)' \cdot (C+D+E)' \quad (A+B)'$$

$$= \boxed{(A+B)'} \quad \text{SOP}$$

$$3. a) (AB+C)(B+CD)$$

$$(AB+CB)$$

$$AB + ABCD + CB + CD$$

$$AB + ABCD + CB + CD$$

$$\boxed{AB + CB + CD \quad \text{SOP}}$$

$$\boxed{\text{SOP } AB + CB + CD \quad \text{SOP } [AB + C(C+D)]}$$

$$(X \cdot \bar{W} \cdot \bar{X}YZ)^6$$

$$b) X + X (X' + Y) (Y + Z')$$

$$= X + X(X'Y + X'Z' + YZ) \quad \begin{matrix} \text{Absorption law} \\ X \cdot O = 0 \end{matrix}$$

$$= X + (XX'Y + XX'Z + XYZ + XYZ)$$

$$\boxed{X + XY + XYZ \quad \text{SOP}}$$

2c

$$f. \quad F(x,y,z) = \Sigma(0, 1, 5, 7)$$

	00	01	11	0	10
0	1	1			
x	1	1	1	1	
z					

$$= \bar{x}\bar{y}z + \bar{x}\bar{y}z \Rightarrow \bar{x}\bar{y}$$

$$= xyz + x\bar{y}z \Rightarrow xz +$$

$$F = \bar{x}\bar{y} + xz$$

b)  $F(A,B,CD) = \Sigma(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

AB \ CD

	00	01	11	10
00	1			
01	1	1	1	1
11		1	1	1
10	1	1		1

$$F = \overrightarrow{BD} + \overrightarrow{AB} + BD$$

$$c) f(a,b,c,d) = \sum_m (3, 7, 11, 12, 13, 15) + \sum_d (5, 8, 9, 14)$$

$a_b \backslash c_d$	$\bar{Y}$	$Y$	
00	00	01	11
01		X	1
11	(1 1)	1	X
10	(X X)	1	X
	$\bar{z}$	$z$	$\bar{z}$

$$F = \overline{CD} + \overline{AC}$$