12/12

Due Oct 27th

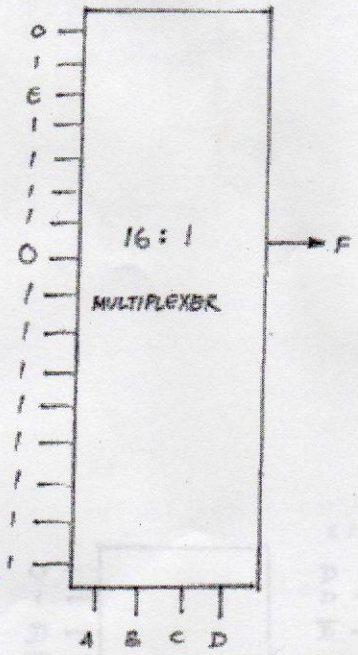
EE 451

HOME WORK # 9 8

4.9
4.8
2/2

$F(A,B,C,D,E) = A + \bar{C}D + B\bar{D} + \bar{B}D + \bar{E}CE$

A	B	C	D	E	F
0	0	0	0	0	0
0	0	0	0	1	0
0	0	0	1	0	1
0	0	0	1	1	1
0	0	1	0	0	1
0	0	1	0	1	1
0	0	1	1	0	1
0	0	1	1	1	1
0	1	0	0	0	1
0	1	0	0	1	1
0	1	0	1	0	1
0	1	0	1	1	1
0	1	1	0	0	1
0	1	1	0	1	1
0	1	1	1	0	0
0	1	1	1	1	0
1	0	0	0	0	1
1	0	0	0	1	1
1	0	0	1	0	1
1	0	0	1	1	1
1	0	1	0	0	1
1	0	1	0	1	1
1	0	1	1	0	1
1	0	1	1	1	1
1	1	0	0	0	1
1	1	0	0	1	1
1	1	0	1	0	1
1	1	0	1	1	1
1	1	1	0	0	1
1	1	1	0	1	1
1	1	1	1	0	1
1	1	1	1	1	1



4.11

4.9 — TO IMPLEMENT AB + CD = XYZ USING 3 8:1 MULTIPLEXER

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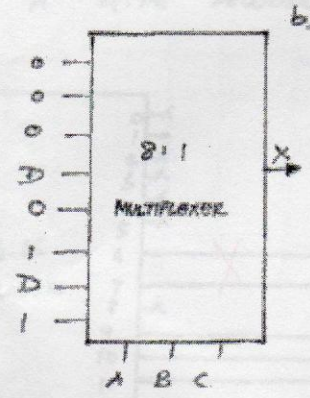
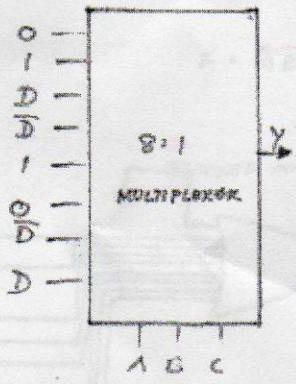
A	B	C	D	X	Y	Z	
0	0	0	0	0	0	0	①
0	0	0	1	0	0	1	
0	0	1	0	0	1	0	②
0	0	1	1	0	1	1	
0	1	0	0	0	0	1	③
0	1	0	1	0	1	0	
0	1	1	0	0	1	1	④
0	1	1	1	1	0	0	
1	0	0	0	0	1	0	⑤
1	0	0	1	0	1	1	
1	0	1	0	1	0	0	⑥
1	0	1	1	1	0	1	
1	1	0	0	0	1	1	⑦
1	1	0	1	1	0	0	
1	1	1	0	1	0	1	⑧
1	1	1	1	1	1	0	

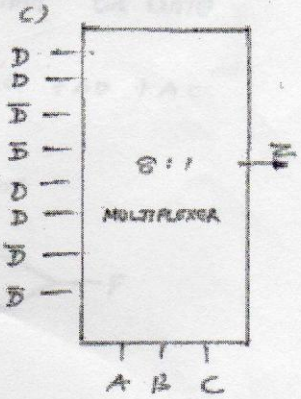
a)



b)



c)



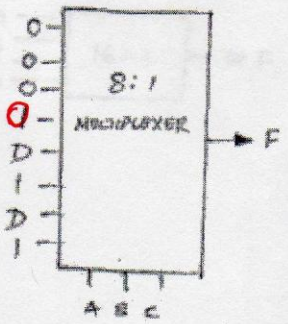
4.18?

4.15

6/6

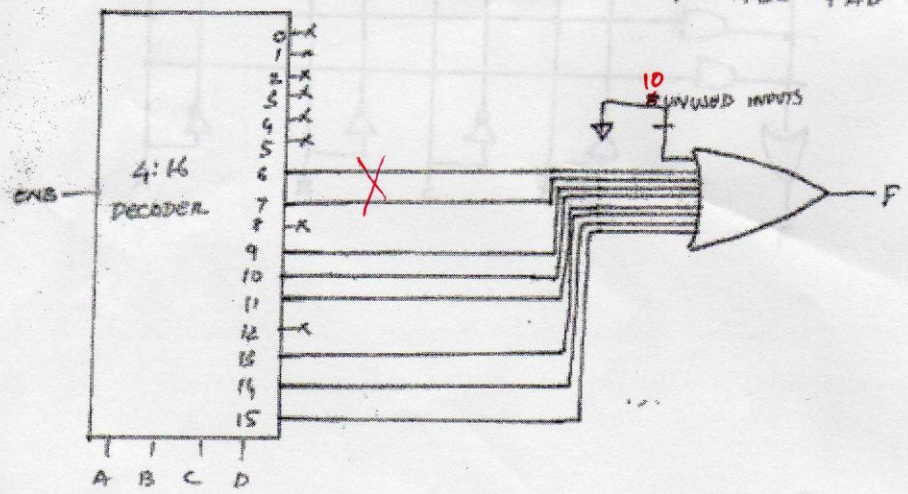
a) $F = \bar{A}\bar{B}C + AD + AC$

A	B	C	D	F	
0	0	0	0	0	M0
0	0	0	1	0	M1
0	0	1	0	0	M2
0	0	1	1	0	M3
0	1	0	0	0	M4
0	1	0	1	0	M5
0	1	1	0	0	M6
0	1	1	1	0	M7
1	0	0	0	0	M8
1	0	0	1	1	M9
1	0	1	0	1	M10
1	0	1	1	1	M11
1	1	0	0	0	M12
1	1	0	1	1	M13
1	1	1	0	1	M14
1	1	1	1	1	M15



b) A 4:16 DECODER WITH A 16-INPUT OR GATE

$F = \bar{A}\bar{B}C + AD + AC$



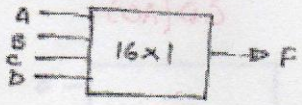
4.18 ~~4.15~~

$A\bar{B}C + AD + AC$

c) A 16 – WORD ROM

SAME TRUTH TABLE AS PART A

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



d) ~~ABC~~ $A\bar{B}C$ + AD + AC