

On my honor, I have neither given nor received any unauthorized aid for inappropriate assistance for this exam. The work done on this exam is totally my own. I understand that by the school code, violation of these principles will lead to a zero grade and is subject to harsh discipline issues.

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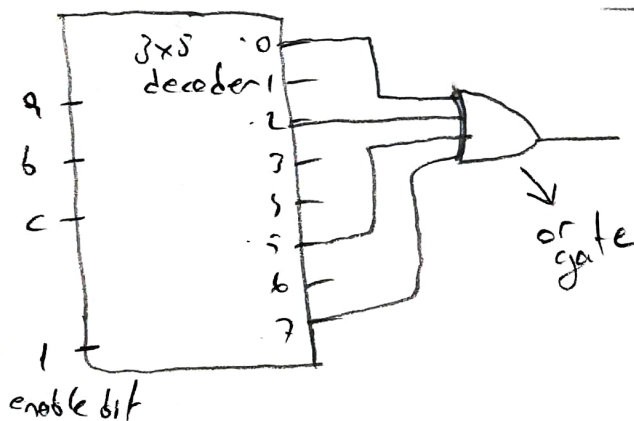
a	b	c	F
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

a)

$$F = a'b'c' + a'b'c + ab'c + abc$$

$\Sigma(0, 2, 5, 7)$  minterms

b)



# Yous Emre Ertekin

2-1 Q6

	c	d	01	11	10
00	0	0	0	0	
01	0	1	1	1	
11	*	*	x	x	
10	1	1	x	x	

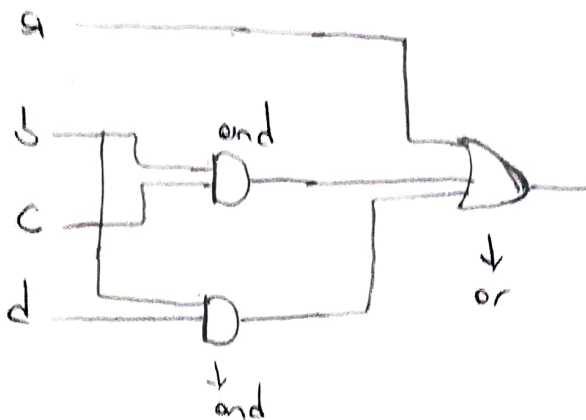
bd + bc

a

$$y = a + bd + bc$$

$$a + b(dc)$$

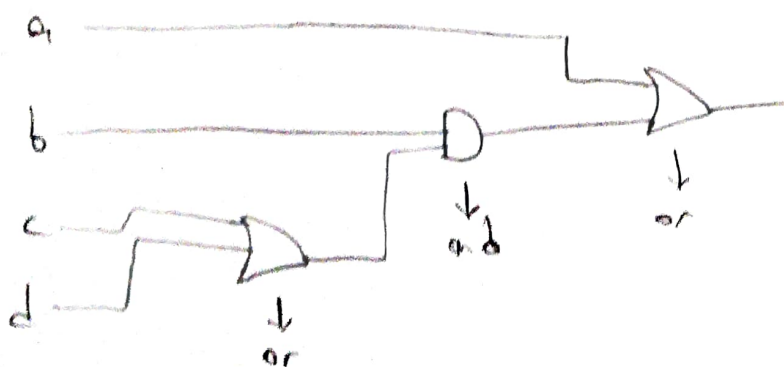
b)



number of  
transistor =  $7 * 2 = 14$

c)

$$a + b(dc)$$



number of  
transistor  
=  $6 * 2 = 12$

Gate delay  
previous = 2  
new = 2

# Yans Enre Entas

3-)

AB \ CD	00	01	11	10
00	0	1	3	2
01	4	1	7	6
11	12	13	15	14
10	8	9	11	10

$$A'B + BC'D' + ACD$$

$$+ d(A, B, C, D) \Rightarrow$$

$$\Sigma(0, 3, 9, 13)$$

$$A'B'C'D' + A'B'CD + AB'C'D + ABC'D$$

0000      0011      1001      1101

AB \ CD	00	01	11	10
00	1		1	
01				
11		1		
10		1		

$$\downarrow$$

$$A'B'C'D' + ACD + A'B'CD$$

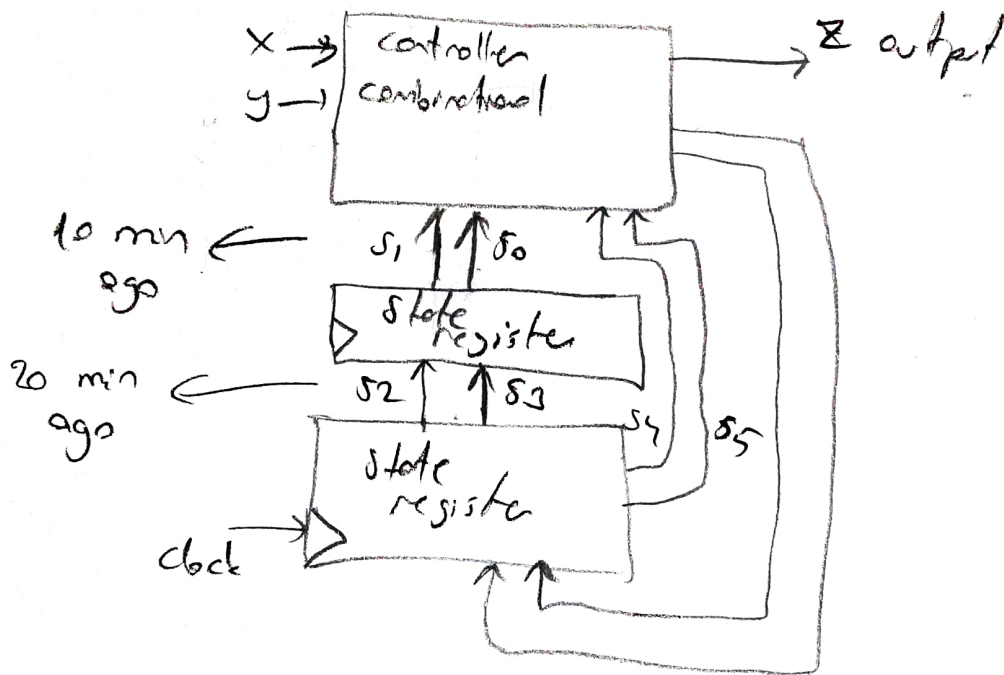
# Yours Error Estimation

4-) clock = 10 min

before 20 min

if current =  $x, y \Rightarrow z = x$

else  $z = y$



$x$  and  $y$  is present values coming from fsm  
 $s_1$  and  $s_0$  is 10 min before values  
 $s_4$  and  $s_5$  are 20 min before values

In controller  $x$  and  $s_0$ ,  $y$  and  $s_1$  will be compared  
if they are equal  $z$  will be 20 min ago  $x$

this info will come  
from  $s_4$  and  $s_5$