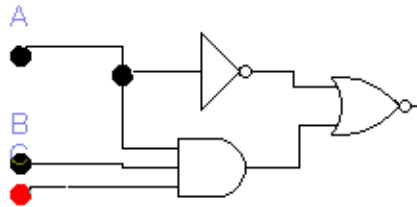


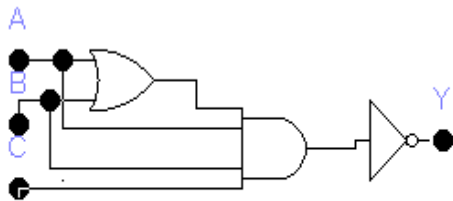
# CS\_HW02\_solutions

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1.

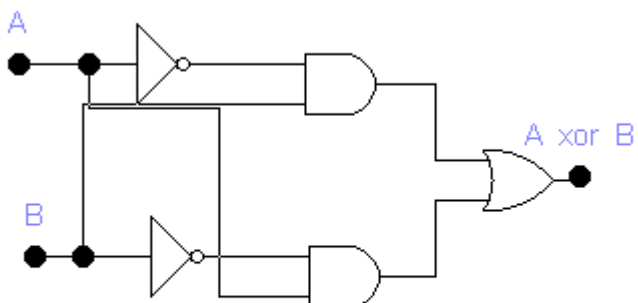


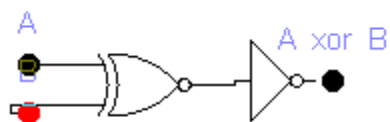
A	B	C	X
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0



A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

2.





3 One practicable solution

From up to down, from left to right : C B A B A C B

A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

4 3.36 is a 2-line-mux :

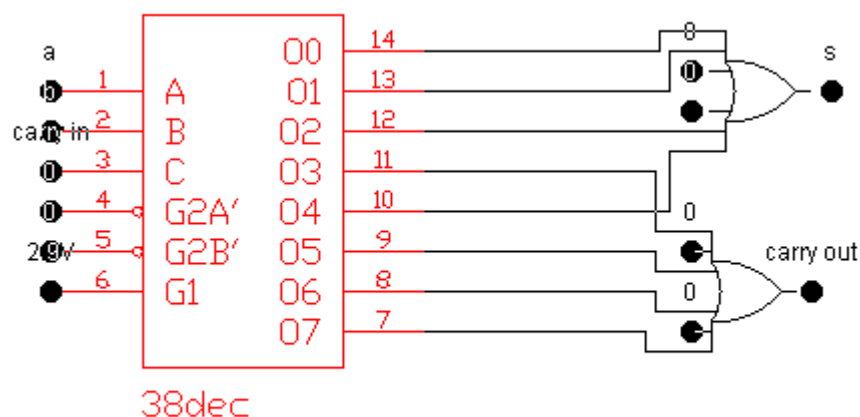
which function is select the input signal according to the input of signal A

3.37 is a latch :

which function is to store a signal. We can see, if the input of B is 1, change A from 0 to 1 won't change the output signal D. But , if the input of signal B is 0, then when A is 0, D is 1, and D changes from 1 to 0 when A is set to 1.

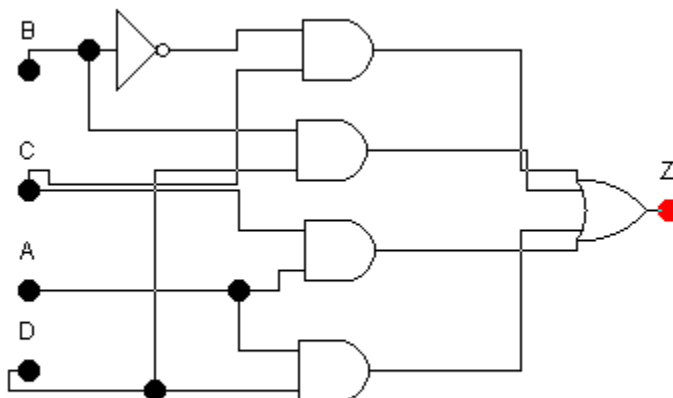
5 3 3 12 96

6



7.

A	B	C	D	Y
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
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



8.

a.

A	B	Y
0	0	E
0	1	L
1	0	G
1	1	E

b.  $G = A \text{ and } (\text{not } B)$ ,  $L = B \text{ and } (\text{not } A)$ ,  $E = (A \text{ and } B) \text{ or } (\text{not } A \text{ and } \text{not } B)$

9 110000 12

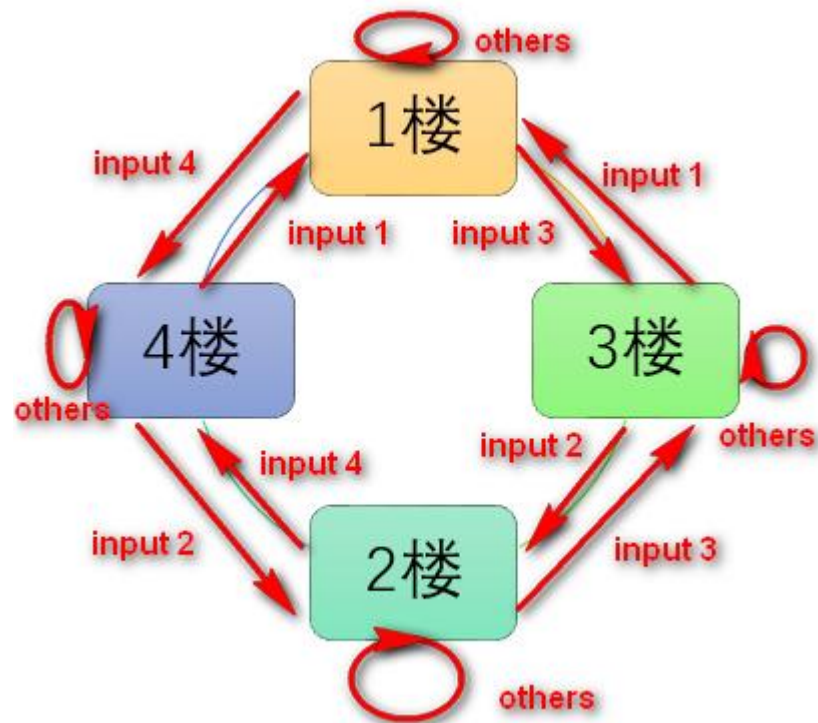
10 a. 34

b. 7

c. Every element's circuit won't influence each other ,thus there won't be delay .

11.

desired floor		Current floor		Result floor	
I1	I0	C1	C0	O1	O0
0	0	0	0	0	0
0	0	0	1	0	1
0	0	1	0	0	0
0	0	1	1	0	0
0	1	0	0	0	0
0	1	0	1	0	1
0	1	1	0	1	0
0	1	1	1	0	1
1	0	0	0	1	0
1	0	0	1	0	1
1	0	1	0	1	0
1	0	1	1	1	1
1	1	0	0	1	1
1	1	0	1	1	1
1	1	1	0	1	0
1	1	1	1	1	1



Notice that when push the button ,it's marked with 1,2,3,4 floor. For electric digital informations , 00 represent the first floor , 01 repe the second, and so on.