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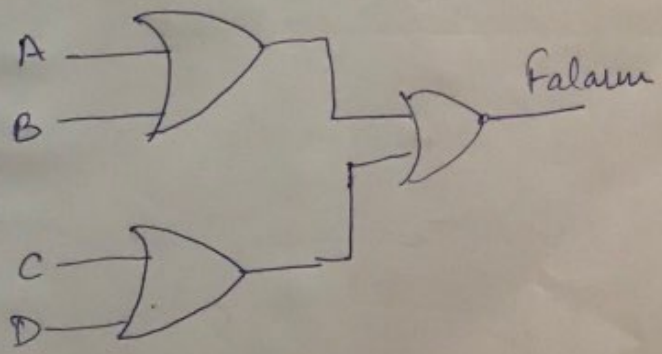
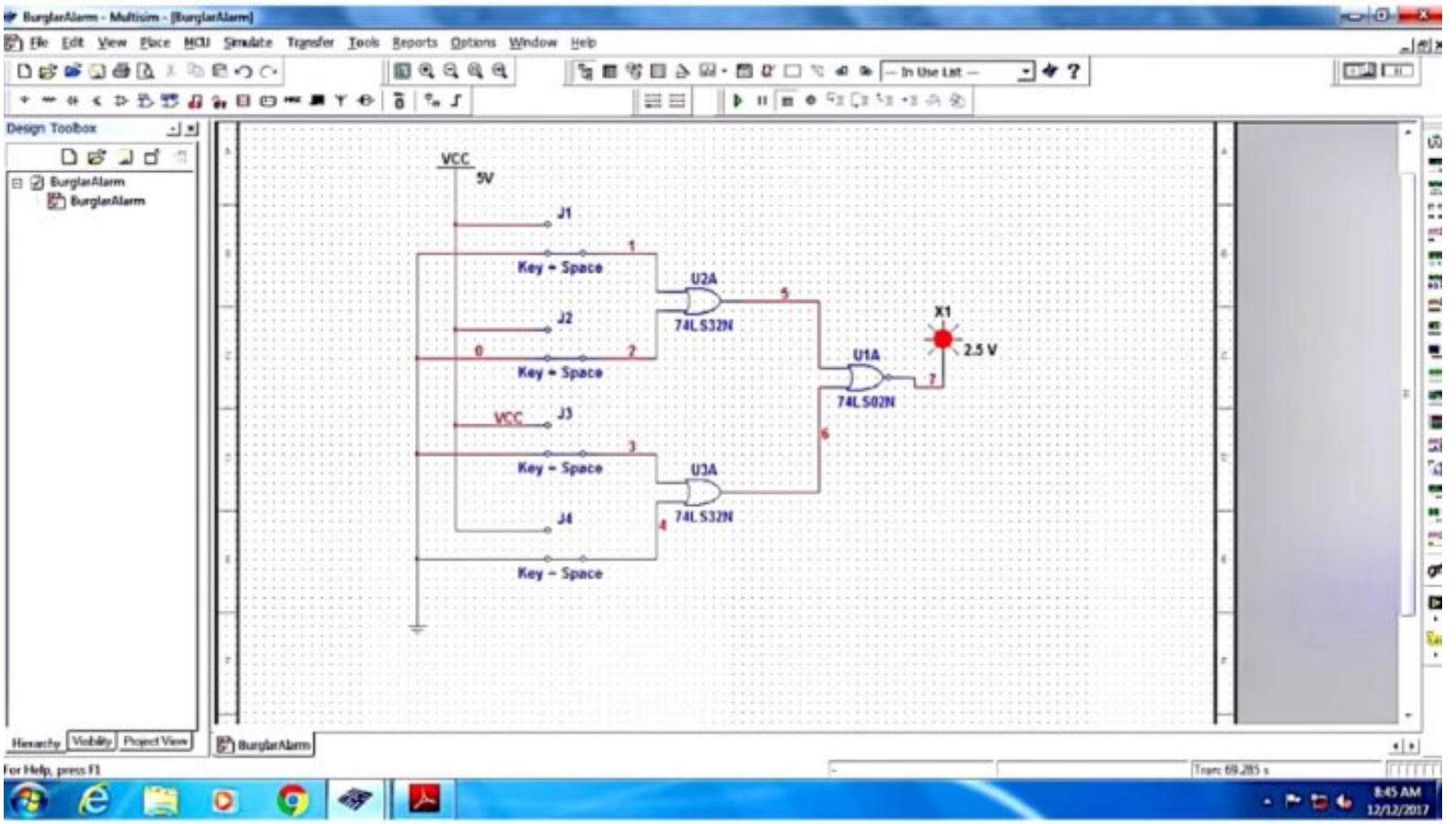
17BIT0028

Q A burglar alarm for a car has a normally LOW (grounded) switch on each of four doors. If any door is opened, the output of that switch goes HIGH. The alarm is set off with an active-HIGH output. What type of gate will provide this logic?

A	B	C	D	Falarm
0	0	0	0	1
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	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0





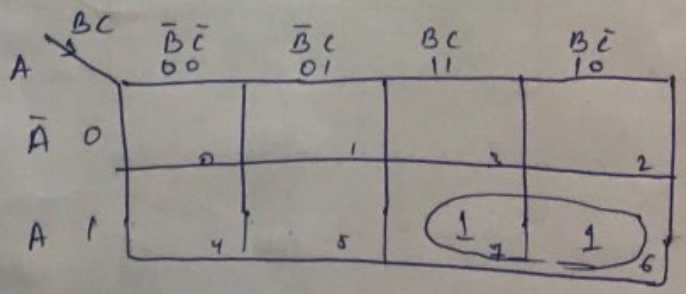
Exp-2.

Combinational Circuit

Q. Design a combinational circuit which take a three bit input number and generate a six-bit output which is the square of the given input number.

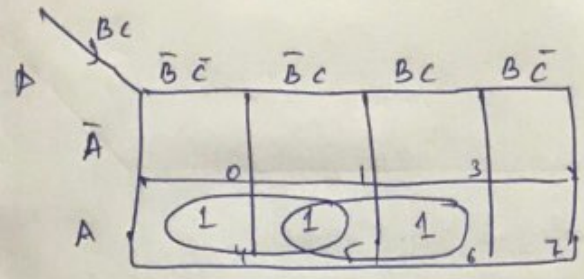
A	B	C	O_1	O_2	O_3	O_4	O_5	O_6
0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	1
0	1	0	0	0	0	1	0	0
0	1	1	0	0	1	0	0	1
1	0	0	0	1	0	0	0	0
1	0	1	0	1	1	0	0	1
1	1	0	1	0	0	1	0	0
1	1	1	1	1	0	0	0	1

$O_1 = \Sigma(6,7)$



$O_1 = AB$

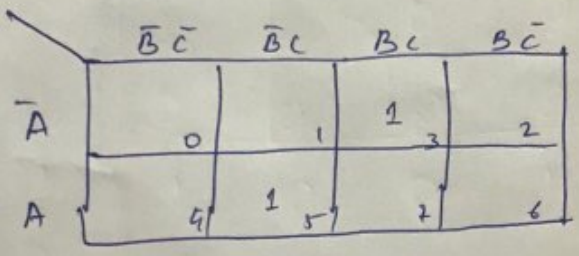
$O_2 = \Sigma(4,5,7)$



$O_2 = A\bar{B} + AC$

$= A(\bar{B} + C)$

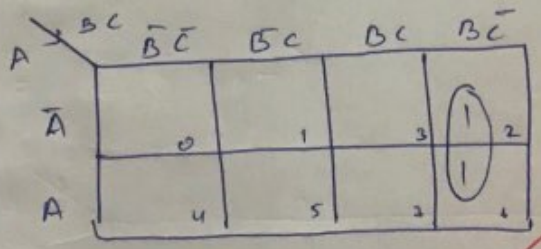
$O_3 = \Sigma(3,5)$



$O_3 = \bar{A}BC + A\bar{B}C$

$= C(A \oplus B)$

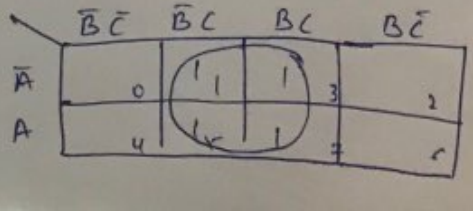
$O_4 = \Sigma(2,6)$



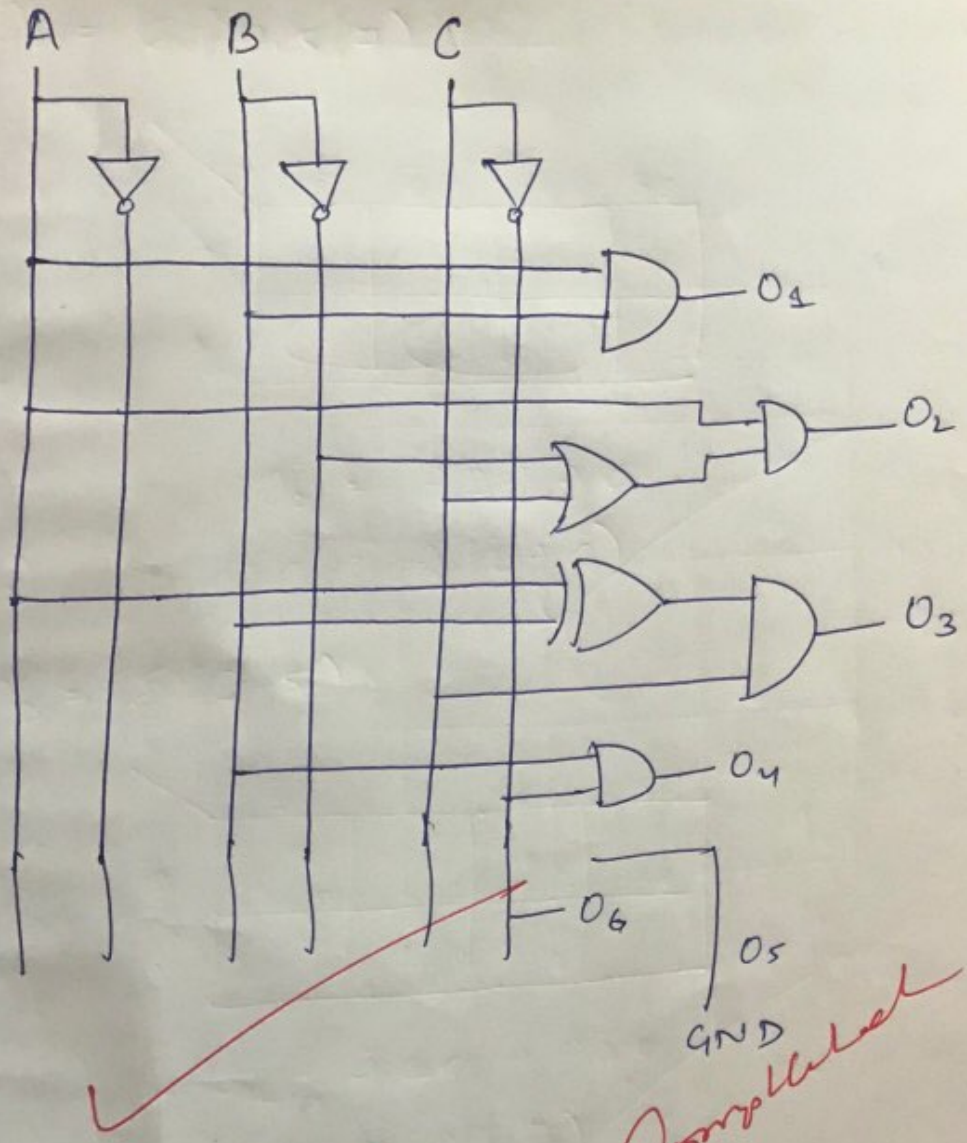
$O_4 = B\bar{C}$

$O_5 = GND$

$O_6 = \Sigma(1,3,5,7)$



$O_6 = C$



Completed

21/12/2017