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Computer Science 240-20

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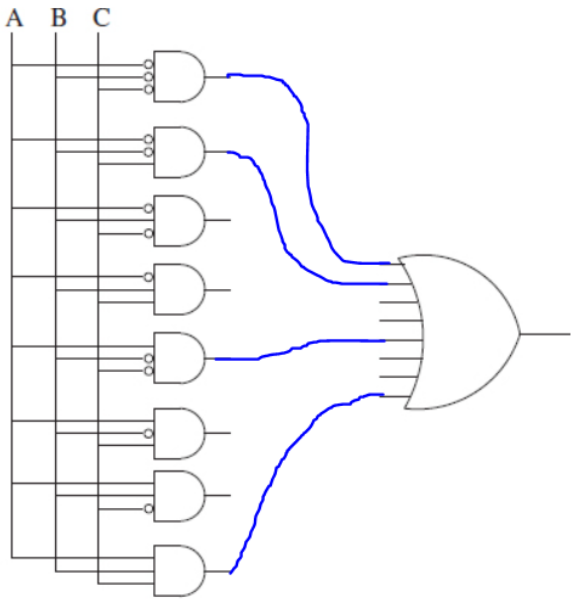
Problem set

1. If C,D,E are 1 and A,B,F are negate then the output will be 1

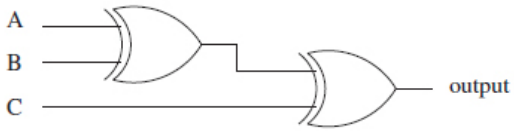
2.

A	B	C	Out
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1



3.

3.14 The following logic circuits consist of two exclusive-OR gates. Construct the output truth table.



A	B	C	output
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1

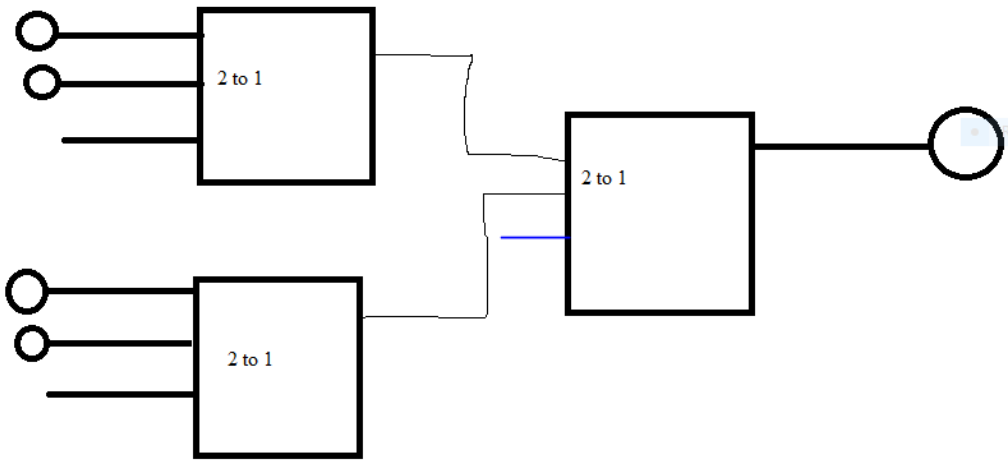
3.16 Fill in the truth table for a two-input NOR gate.

4.

A	B	A NOR B
0	0	1
0	1	0
1	0	0
1	1	0

5. A five input decoder would probably have about thirty two because 2^5.
6. A sixteen multiplexer has only one output line, but will have four select lines.
7. The number of nibbles in a memory are 32768 because it is 2^14 = 16384 then you multiply that by 2 to get 32768.

8.



9.

3.29 Given the logic circuit in Figure 3.41, fill in the truth table for the output value Z.

A	B	C	Z
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

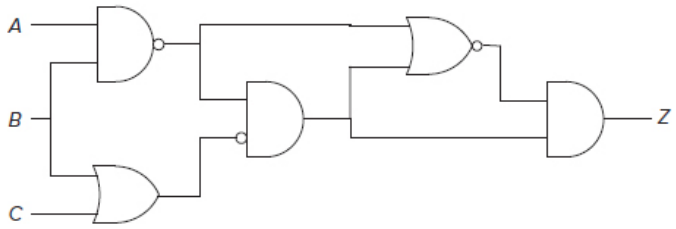


Figure 3.41 Diagram for Exercise 3.29.

10. The number of storage that the memory contain is about 12582912 because the address bit is 22 while the bit entry is 3 so 2^22 * 3.