

Experiment Report Debugging Circuits

Name : _____

Name : _____

TA : _____

Section : _____

1. Measure the voltage for nodes C to F using the digital oscilloscope probe and record the result onto the truth table below. Compare your measured result to the truth table you derived in your prelab.

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

2. Immediately after the TA “constructed” your circuit, measure and record the output onto the truth table below.

INPUTS			OUTPUT
A	B	G	H
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

3. By just working with the 1st stage, measure and record the truth table for nodes C, D, E, and F. Compare the truth table with the one in the question 1. How are they different? Can you identify which logic gate in the XOR module is not behaving correctly? Check with your TA to verify your solution.

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

4. Now work with the 2nd stage alone. Measure and record the truth table for the output node H. Compare your measured truth table with the one give in Table 1. Can you figure out what is wrong with the 2nd stage? Check your solution with your TA.

INPUTS		OUTPUT
F	G	H
0	0	
0	1	
1	0	
1	1	

5. Now re-connect the wire that links the two stages and record the final truth table.

INPUTS			OUTPUT
A	B	G	H
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	