

Name: \_\_\_\_\_

EECE.3170 Spring 2024  
Quiz 1

1. Describe how to calculate the binary value of a number using 2s complement. (8 points)

Take the one's complement (invert all bits) then add 1

2. Convert the following numbers into binary. Use 2s complement to find negative values and ensure that positive values have a leading 0. (4 points each)

- a. 23

010111

- b. -23

101000  
+     1  
-----  
101001

- c. 10

01010

- d. -10

10101  
+     1  
-----  
10110

3. List the five major components of the Von Neuman architecture (10 points each)

Arithmetic/Logic Unit (ALU), Control Unit, Memory, Input, Output