**Ve270 Introduction to Logic Design Homework 1**

**Assigned: September 17, 2019**

**Due: September 24, 2019, 4:00pm.**

**The homework should be submitted in hard copies.**

1. Fill out the blank spaces, assuming unsigned numbers. Show steps to earn partial credits. (8 points)

10110101.101 2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_16

75.26 10 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_8 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3

1. Fill out the blank spaces, assuming 2’s complement numbers. (16 points)

-5910 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_16

5910 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_16

100101101012 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_10

F3A816= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_10

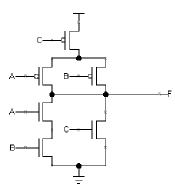
1. Perform the following arithmetic operations step by step, assuming 2’s complement numbers: (12 points)

(6FA49D + 73BD) 16 =

(10100 – 10101001) 2 =

(534 – 265) 8 =

1. Problem 2.14 (Boolean equation = logic equation) (4 points)
2. Problem 2.15 (10 points)
3. Problem 2.17 (c) (10 points)
4. Problem 2.21 (10 points)
5. Problem 2.34 (a) (c) (10 points)
6. Build a truth table for the following circuit. (10 points)



Vdd

1. Given a logic equation F = a’c’ + bc’ + ab, draw an output waveform for F based on the given input waveforms. (10 points)



a

F

c

b