EGC-220 HW #1 Dr. Izadi

First Name: _____ Last Name: _____

For full credit, you need to show your work neatly and box your answers.

20 PT.

1. Convert the following numbers with the indicated bases to decimal:
   a. $(4310)_6$
   b. $(19C)_{14}$
   c. $(1E.8)_{16}$
   d. $(26.24)_8$

12 PT.

2. Convert $(1838.36)_{10}$ to the following bases:
   a. 16
   b. 8
   c. 2
   d. 12

15 PT.

3. Convert the following binary numbers to hexadecimal, octal and decimal.
   a. 101101.101
   b. 101.010
   c. 1010.101

12 PT.

4. Find the 9^{th} and 10^{th} complement of following decimal numbers
   a. 9815634
   b. 7204870
   c. 10000000
   d. 00000000

4 PT.

5. Find the 16^{th} complement of $(ACB3.B2)_{16}$

20 PT.

6. Perform subtraction on the following unsigned binary numbers using the 2's complement of the subtrahend. If the result should be negative, 2's complement it and affix a minus sign.
   a. 11011 – 10111
   b. 100100 – 10101
   c. 101001 – 110000
   d. 101010 - 101011

20 PT.

7. What does the following binary numbers represent in
   a. Unsigned domain
   b. Signed magnitude
   c. Signed 2's complement
   I. 01011101
   II. 11011100
   III. 11111111

12 PT.

8. Perform the following operations in binary. Assume signed 2's complement notation.
    a. 54 + 72
    b. 54 – 72
    c. 72 – 54
    d. (-72) – (-54)

15 PT.

9. Perform the following arithmetic operations in the indicated bases.
    a. $(23.6)_8 \times (76.5)_8$
    b. $(23.6)_{12} \times (76.5)_{12}$
    c. $(23.6)_{16} \times (76.5)_{16}$

Due Date: Thursday 2/18/2023