CSE260
Assignment 01

This assignment must be hand-written. Show ALL steps in ALL questions.

1. Convert the following binary numbers to equivalent decimal numbers.

(a) $(101110010001)_2$

(b) $(11011.101)_2$

2. Convert the following decimal number to equivalent binary numbers.

$(4195)_{10}$

3. Convert the following octal numbers to equivalent decimal numbers.

a) $(45)_8$

b) $(2173)_8$

4. Convert the following decimal number to equivalent hexadecimal numbers. $(513)_{10}$

5. Convert the following binary number to equivalent hexadecimal numbers. $(101101110)_2$

6. Perform the following base conversions

a) $(29)_{12} = (?)_7$

b) $(10110111)_5 = (?)_4$

7. Perform addition, subtraction and multiplication for the pair of following base-9 numbers. Verify your results by converting the problem into decimal.

412

134

8. Convert the following eight-bit one's complement number to decimal: $01000010_{1's}$

9. Convert the following eight-bit two's complement number to decimal: $10111100_{2's}$

10. Perform the following arithmetic operations using 10-bit two's complement and one's complement systems . State if there is an overflow in each case.

a) 91 - 499

b) 379 + 98

11. You are a computer engineer and you want to buy two 8 GB DDR4 RAMs. Each RAM costs $(1C2)_{16}$ dollars. You also want to buy a graphics card RTX which cost $(10010110000)_2$ dollars. However, you don't have that much money with you and you are afraid to ask about it to your parents. Suddenly, one of your generous friends

agreed to give you the money you need. He decided to give you $(4064)_8$ dollars. How much dollars will you have left after buying those components? (Show the answer in decimal)