CSCE 211 CHAPTER 1 HOMEWORK 03 SEPTEMBER 2020

You must show **all** your work! Answers without supporting work will not be given credit. Write answers in spaces provided. Illegible work falls under the *Intended Purpose* policy.

Name: Isabella Buranich

1. Convert the following as indicated: (0.4 points)

   (a) 342_{10} to an 8-bit unsigned binary integer.

Answer:

   (b) 00100101_2 to a decimal integer.

Answer:

(c) 00101001_2 to a hexadecimal integer.

Answer:_____

(d) $B1_{16}$ to an 8-bit unsigned binary integer.

Answer:_____

Cont.

2. Compute the **4-bit binary** sum of the following 4-bit unsigned binary integers. Provide the base-10 result as well. Do allow values to overflow—that is do not add bits in excess of the 4 bits. Additionally, provide decimal($base_{10}$) integer values [1]: (0.4 points)

   (a) $0101 + 1001$

   Answer:_____

   (b) $1010 + 0010$

   Answer:_____

[1] Take into account overflow. Do not tell me that $15 + 15 = 30$. I know you know that.

Cont.

3. Convert the following to 8-bit signed binary integers and perform the indicated operations: (0.4 points)

   (a) $1F_{16} - 20_{16}$

Answer:_____

   (b) $31_{10} - 17_{10}$

Answer:_____

Cont.

4. For each of the following, show their conversion to binary coded decimals (BCD) as 8421-code: (0.4 points)

   (a) 127_{10}

Answer:_____

   (b) $F7_{16}$

Answer:_____

Cont.

5. Decode the two following 8-bit binary **strings** into ASCII characters[2] characters: (0.4 points)

   (a) 01100011 01010011 01000011 01100101

Answer:_____

   (b) 01110100 01101100 00111011 01100100 01110010

Answer:_____

[2]You may use the 7-bit ASCII from the book, but do keep in mind ASCII values, like all values in a computer, are 8-bits in size.

The End.