

Fall 2016 – CS2420
Homework 1
Due Date : September 14th 2016

1. Convert the hexadecimal number FC93 to binary, and then convert it from binary to octal , and finally convert it from binary to decimal (10 pt).
2. Convert the decimal number 325.657 to binary . Please show at least 4 digits in the Fraction part (10 pt).
3. Express the following numbers in decimal (40 pt):
 - (a) $(10011.1011)_2$
 - (b) $(154.3)_{16}$
 - (c) $(354.71)_8$
 - (d) $(B6F9.B17B)_{16}$
4. Obtain the 2's complements of the following numbers. All the numbers are represented by **8 bits**. (10 pt)
 - (a) -96 (b) -188
5. Perform subtraction on the given numbers by using their 2's complement representation. And please verify the correctness of the subtraction result by showing the corresponding decimal value of result. All the numbers are represented by **8 bits**. (10 pt)
 - (a) 127-15 (b) 37-21
6. Convert decimal 3908 to BCD code and ASCII. (10 pt)
7. Convert decimal number 298 to Gray code . (5 pt)
8. Convert Gray code 011101101010 to decimal number. (5 pt)

Remarks :

- The homework does not have to be typed, however, it must be written using **pencils** only. Include the following information on the top left hand side of the first page :-
 - Your Name :
 - Your Major :
 - Your Roster or Serial Number :
 - Homework Number : 1
 - Due Date : March 14th, 2016
- Turn in hard copy of your assignment no later than 1:00 pm on the due date. The hard copy must be **stapled**.
- Make sure that you write the question first then followed by your answer.
- The homework must also be uploaded using homework upload no later than 1:00 pm on the due date. Use the following name format for your compressed file name **LastName_FirstName_CS2420-A1.zip**.
- Must **show** all your work.
- **Missing ANY of the above items from your assignment will result in deducting 30% of the assignment grade. NO EXCEPTIONS.**
- **No Late assignment will be accepted.**
- **Copying the assignment from others will result in grade ZERO.**