# Due Date: ­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Instructions

On a separate sheet of paper, answer each of the following questions. Questions 1-7 are worth 10 points each. Question 8 is worth 30 points.

1. What is the “Best Number”? Explain why, in the context of Chapter 01, which includes a discussion of Decimal, Hexadecimal, Binary, and Boolean Logic. Hint: Ask Sheldon Cooper.
   1. 73 is the 21st prime number, its mirror, 37, is the 12th, and its mirro, 21, is the product of multiplying seven and three. In binary, 73 is a palindrome, 1001001, which backwards is 1001001
2. What is the product of ABC (hexadecimal) and DEF (hexadecimal) expressed in decimal, hexadecimal, and binary?
   1. 95 91 84
   2. 9,802,116
   3. 1001 0101 1001 0001 1000 0100
3. Without using a calculator, what is the second hexadecimal digit in the following binary number: 1001 1111 1001 0000 1110? Hint: You should be able to answer this question in one second.
   1. F
4. What is the decimal value of the following unsigned binary number: 1000 0001? What is the decimal value of the following signed binary number: 1000 0001?
   1. 129
   2. 1000 0001 was 0111 1111 = 127 signed is -127
5. What is wrong with the following Boolean expression:
   1. Can’t have a set of all that is not True and all that is not False
6. Answer Questions 23 Section 1.7.1 on Page xx.
   1. 2^129 - 1
7. Answer Questions 24 Section 1.7.1 on Page xx.
   1. 2^86 - 1
8. Write a short ASM program to do the following. Submit a screen print of your code and a screen print of the output of running the program.
   1. Move the decimal number 73 to the “eax” register.
   2. Display the contents of the registers.
   3. Change the high-order bits of the 16-bit portion of the “eax” register to hexadecimal “AA”.
   4. Display the contents of the registers.
   5. Change the lower-order bits of the 16-bit portion of the “eax” register to decimal 73.
   6. Display the contents of the registers.

Text

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