CSE 3430

Midterm 1

Sample Questions (7 total)

Part A. True-False

Instructions: For each of the statements below, write T **in the blank after the question number (NOT IN THE MARGIN OR ANYWHERE ELSE!)** if the statement is true, or write F in the blank if the statement is false, based on the content of the class slides, and what was presented in class.

Q-2. ____ Signed and unsigned integers, floating point numbers, characters, and instructions in computer systems are stored as strings of bits, but more complex kinds of data, such as audio and video data, are stored in a different way (that is, not as strings of bits).

Q-3. ____ To form the negative of any number in 1's complement, we just need to invert all of the bits (convert 1's to 0's, and 0's to 1's).

. . . . . .

Q-6. ____ If the last carry bit generated for addition of two 2's complement numbers is 1, then the sum is always incorrect (that is, there is overflow).

Q-7. ____ The UTF-8 encoding method for character data uses the same number of bytes to encode all characters which can be encoded by UTF-8 (that is, the same number of bytes is used for the UTF-8 code for each of the more than 1 million characters which can be encoded).

Part B. Multiple choice (40 points total. 1 point each).

Instructions: For each of the questions below, choose the best answer, based on the content of the class slides, and what was presented in class. **IMPORTANT:** ***WRITE THE LETTER OF YOUR CHOICE IN THE BLANK – DO NOT SIMPLY CIRCLE THE LETTER WITH YOUR CHOICE OR WRITE IT IN THE MARGIN OR ANYWHERE ELSE! (otherwise, NO CREDIT can be given).***

Q-1. ____ We said in class that, for 1's complement addition, a second addition is required to get the correct result if the two operands (integer numbers) being added have which combination of signs?

A. If both operands are negative.
B. If both operands are non-negative.
C. If the two operands have different signs (one negative and one non-negative).
D. This is a trick question: A second addition is never required when adding numbers in 1's complement.

Q-2. ____ What is a subroutine?

A. A sequence of not more than 20 instructions which may need to be executed a number of times in a program.
B. A sequence of instructions which may be executed by using a *jmp* instruction in Y86-64.
C. A sequence of instructions which may be executed by using a *call* instruction in Y86-64.
D. None of the above.

Q-3. ____ IN Y86-64, how are the flags set if the jump is taken (this means the jump instruction will cause the next instruction to be the one at the address of the label) for a *jg label* instruction?

A. The sign flag is 1 and the zero flag is 1.
B. The sign flag is 1, and the zero flag is 0.
C. The sign flag is 0, and the zero flag is 0.
D. The sign flag is 0, and the zero flag is 1.