CS4211/CS5211 Computer Organization 1 Autumn 2006 **Section 1.**
Attempt all Questions.

Name: _____ Student ID: _____

1. Real numbers are **not** represented in computers in:

    a. Floating Point
    b. Packed Decimal
    c. BCD
    d. Twos Complement

2. The result of subtracting hexadecimal 012B from 100A is

    a. 0889
    b. 0EDF
    c. 188F
    d. 0EFF

3. The Twos Complement byte representation of 38 is

    a. 0010 0110
    b. 11011010
    c. 10100110
    d. 11011001

4. The decimal equivalent of Twos Complement byte 1011 1111 is

    a. -63
    b. –65
    c. 191
    d. –55

5. The maximum positive decimal integer that can be held in 7-bit Twos Complement is

    a. 127
    b. 63
    c. –32
    d. 31

6. The excess 128 byte representation of -3 is

    a. 1111 1101
    b. 0111 1100
    c. 0111 1101
    d. 1000 0011

The next 4 questions relate to the Instruction Set Architecture for the BARC RISC 'load-store' computer which has a 32-bit word with 64 general purpose registers (R0 to R63), an IR, Program Status Register, PC and 62 opcodes. Instructions are 32 bits long, usually 3-address, or two address with one immediate operand.

7. The number of bits required for operand addresses in the 3-address instruction mode is

    a. 3
    b. 18
    c. 15
    d. 5

8. The number of bits required for the opcode is:

    a. 6
    b. 16
    c. 5
    d. 7

9. Which one of the following could possibly be a legal instruction in BARC?

    a. add x, 4, R1 !add 4 to (x), result in register 1
    b. store x,y !copy (x) to y
    c. store (x), R4 !copy (x) to register 4
    d. load x, R48 !copy (x) to Register 48

10. R1 contains -7 and R8 contains 10. Determine which condition codes will be set by the instruction:

        add R1, -3, R8 ! result in R8

    a. N only
    b. N and C
    c. Z and N
    d. Z and C