**COMP 2130, Quiz 2, Winter 2013**

Student Name: Student Number:

1. (2 marks) Convert –125 to a 8-bit signed binary number, assuming the 2’s complement representation.
2. (8 marks)
3. (2 marks) Convert a hexadecimal number 0x9D to a binary number *P*, and another hexadecimal number 0xB7 to a binary number *Q*.
4. (3 marks) Compute the binary addition *R* = *P* + *Q*, where *P* and *Q* are the binary numbers in (a), assuming the 8-bit 2’s complement representation. What is the addition result in decimal?
5. (3 marks) Compute the binary subtraction *R* = *P* – *Q*, where *P* and *Q* are the binary numbers in (a), assuming the 8-bit 2’s complement representation. What is the subtraction result in decimal?
6. (5 marks) Compute the following bitwise operations, assuming the 8-bit representation.
7. 11010101 & 00001111
8. 11010101 ^ 00001111
9. 0xC7 | 0xF0
10. 01101100 >> 2
11. 0x3A << 2
12. (5 marks) What message will the next code segment print?

char x, y, z;

unsigned char w;

x = 128;

y = 64;

printf(“%d, %d\n”, x, y);

z = x + y;

w = x + y;

x = x >> 1;

printf(“%d, %d, %d\n”, x, z, w);