**CMPE1250 – ICA #3 - Understanding Bitwise Expressions and Types in C**

Answer the following questions. **You must show all work** for any multi-step operations. Indicate any truncations, precedence\*, and associativity\* rules/events at the relevant steps. You may use a calculator to convert values, but a calculator may only be used to validate steps in every other circumstance.

// Q1 {

unsigned int i = 5632 & 0x321 >> 3;

// what is i in binary

// what is i in hex

// what is i in decimal

}

// Q2 {

unsigned int i = (unsigned char)5632 | 0x321 >> 3;

// what is i in binary

// what is i in hex

// what is i in decimal

}

// Q3 {

unsigned char i = (unsigned char)(5632 & 0xF371 >> 3);

// what is i in binary

// what is i in hex

// what is i in decimal

}

\*https://docs.microsoft.com/en-us/cpp/c-language/precedence-and-order-of-evaluation?view=msvc-160

R1.0 1202 Page **1** of **2**

// Q4 {

unsigned int i = (unsigned char)(0x12345678ul / 4);

// what is i in binary

// what is i in hex

// what is i in decimal

}

// Q5 {

unsigned int i = 0b10101010001001000101001100101010 >> 2 & 0xF5A56832u;

// what is i in binary

// what is i in hex

// what is i in decimal

}

// Q6 {

unsigned int i = 8 \* 0x34 + 0b1101010011 << 4 & 0b110011001100 >> 2;

// what is i in binary

// what is i in hex

// what is i in decimal

}

\*https://docs.microsoft.com/en-us/cpp/c-language/precedence-and-order-of-evaluation?view=msvc-160

R1.0 1202 Page **2** of **2**