**SOLUTIONS**

**Spring 2021 CSC332 Sec M Quiz1(Assemply+Interrupts) 100 Points 75 Min.**

**Submit your answers as an attachment and upload it** rather than directly typing your answers in BB system. Use  **Notepad or Word files**.

Q1. (50 Points)

Convert the following code fragment to assembly code fragment, **using instructions of these types (generally discussed in class):**

X is a memory location, R is a register.

Load X, R

Store R, X

CMP R1, R2

JMP

JMPP

Add X, Y //stores result in Y

**Do Not use any other jump instruction such as JMPZ, JMPN etc.**

if (X <Y) X = X + Y;

else Y = Y + X;

L:

Solution:

Load X, R1

Load Y R2

cmp R2, R1

jmpp L1

Add X, Y

JMP L

L1: Add Y, X

L:

Q2(50 Points)

Assume the following:

(a) The interrupt vector is properly loaded, as usual.

(b) Somehow, all the service routines have been wiped out---

they have all become all zeroes.

(c) In this machine language, the leftmost bit of the Op Code of any valid instruction is 1.

Now suppose a user executes a system call.

What will happen? Explain in LESS THAN

50 WORDS.

Answer:

When the first instruction of the service routine is executed, it will generate an interrupt (Illegal Instruction).

Then we start with the service routine for Illegal Instruction.

Its first instruction will generate another Illegal Instruction interrupt.

So we will have an infinite sequence of interrupts like this.