**In Class Exercise 1**

**CSCI 6307**

**Dr. Abraham**

Your Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You are asked to create an imaginary accumulator architecture machine. I explained a 16bit machine in class, you may choose any data width you want. Please allow enough bits for opcode and operand based on the lecture. You need to design your own instruction set. Make sure you have these instructions included: Divide, Multiply, Subtract, Subtract Immediate, Add, Add Immediate, Load, Store, Branch Unconditional, Branch on less than, Branch on less than or equal to, Branch on equal, Branch on greater than, Branch on greater than or equal to, Display the contents of the memory on the output device.

1. Please explain your imaginary machine and bits used for opcode and operand and explain the reason.
2. Give the instruction set you designed. Give machine code and assembly code for these instructions.
3. Write the assembly code for C=A-B
4. show what happens in an Accumulator machine. You may use the notes.