# **CDA 4101** **Assignment: IJVM-Mic 1** **Spring 2017**

Pestaina **Last day to submit: 3/26**

**Typed solutions only. Upload in SCIS Moodle no later than Sunday March 26.**

1. From page 338, Tanenbaum:
2. Problem 3.
3. Problem 5.
4. Problem 7.
5. Problem 9.
6. Write an IJVM code fragment for each of the following:
7. Replace the datum in the top of the stack with its bitwise-NOT.
8. x = a XOR b; a, b and x are allocated in the *local variable frame*.

**Hint**: *bitwise, ā = 1 – a.*

1. Write a MAL Mic1 microcode implementation of the JVM instruction **IXOR**. This instruction pops two words from the stack, and replaces them with their bitwise exclusive-or.
2. Write a MAL Mic1 microcode implementation of the JVM instruction **ISHL**.

The instruction is described in problem 15, page 339. Tanenbaum.