In-class test for SOEN 345, Prof Rigby

Worth 15% of total grade. Don't cheat, 15% isn't worth the black mark on your academic record. 60 minutes. **Answer all questions in the exam booklet!**

Multiple Choice [3 marks]

Question 1: Mockito mocks objects using:

   A. Reflection and a proxy object
   B. Reflection and a facade object
   C. Reflection of an Adapter object
   D. All of the above

Question 2: What is the output for the following code?

when(mockedStack.pop()).thenReturn(3,2,1);
mockStack.pop(); mockStack.pop(); mockStack.pop(); mockStack.pop();

The output is:
   A. 3, 2, 1, 1
   B. 3, 2, 1
   C. 1, 2, 3
   D. 3, 2, 1, null

Question 3: Git bisect on the following sequence of commits. You get fail, pass, fail, which is the culprit commit?

1---2---3---4---5---6---7---8---9

Short Answer [5 marks]

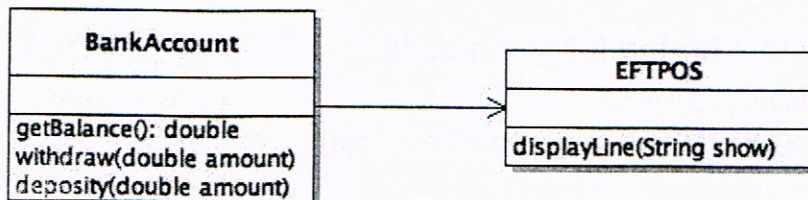Question 4: What is Feathers's definition of "legacy code?" [1 mark]

Question 5: What are the two key characteristics of a unit test? [2 marks]

Question 6: Name the type and give an example of a flaky test? [2 marks]

Coding Questions [14 marks]

Question 7: Recall that the *iterator* for the Stack class for Java is incorrect. Write a unit test that would characterize the actual behaviour of the Java Stack's iterator. [4 marks]

Question 8: The BankAccount code is dependent on the old EFTPOS terminal. [6 marks]

1. Draw a new diagram with the dependency on EFTPOS broken
2. Add a new iPad terminal to your diagram
3. Write Mockito code to check that the BankAccount calls the iPad class to display the balance when a withdrawal is made

Question 9: Parameterize constructor [4 marks].

Consider the following constructor:

```
Pixel(Color color) {
        this.color = color;
        this.position = new position(23, 4, 52);
}
```

1. Parameterize the constructor
2. Make the change behaviour preserving
3. Mock out the position and color