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

Software Engineering II (CS 562)

Exam 2

Part I – True / False, circle T for true or F for false. Statements are intended to have one answer. Evaluate truth based upon the material covered in this class (20 points, 2 points per question).

1. T F An example of insufficient response time is a program that runs an algorithm for 20 seconds after a button click and provides no notice to the user of the expected wait time.
2. T F Peak loads may be managed by increasing throughput, extensive testing, prediction based upon previous experience.
3. T F Formal test cases identifying, classifying, instructions on how to implement, and cleanup.
4. T F Test first development is designing and developing a program then testing it.
5. T F Sandwich testing involves testing only UI classes using stubs.
6. T F Git is a server-based version control system that does not allow the developer to utilize a local repository.
7. T F jUnit code for testing, shell scripts, and large sets of generated test cases that are provided as input via redirection are all methods of manual testing .
8. T F Regression testing is attempting to discover new issues in existing software after making changes such as adding features.
9. T F A burndown chart is a graphical representation of classes implemented versus time.
10. T F Issue tracking software should not include methods to classify software errors, faults, and failures.

Part II – Short and long answer questions (80 points).

1. Describe the difference between function point estimation and the COCOMO/COCOMO II methods (10 points). Your description should be complete. Hint: one of the equations for the COCOMO model is ab \* KLoCb\_b and one for function points is w1\*# of inputs + w2\*# of outputs + w3\*# of inquiries + w4\*# of logic files + w5\*# of interfaces.
2. Explain the difference between big bang testing and incremental testing (10 points).
3. How is bottom up testing accomplished? How is top down testing accomplished? Compare and contrast these types of testing and explain how each is used in sandwich testing (10 points).
4. Describe the difference between manual and automated testing. Explain why both are necessary. Address the issue of user acceptance testing in your answer (10 points).
5. Identify several (at least 3) classes that might be necessary to implement a Video Conferencing application. Use your imagination. Then, estimate the time required to complete a Video Conferencing application using Object Oriented Effort Estimation. Recall that the formula for OO Effort Estimation is (x \* # of classes + # of classes)\*(15 to 20), where x is a UI factor. The UI factor may be as low as 2 for applications with no UI and as high as 3 for those with a complex UI (20 points). You may want to show a couple of UML diagrams.
6. Identify two test cases for the system in the previous problem. These should include a title, module/function name, instructions, expected results, and how to clean up (10 points).
7. Assume for the videoconferencing problem that you were going to add a shared virtual whiteboard. Describe how you would carry out both integration testing and regression testing for this situation (10 points).