

Name: _____

CS3733 Final Exam

1. [8 pt] What are two impacts of unnecessary object coupling?
 - (a)
 - (b)
2. [6 pt] How would you reduce the coupling between two commonly coupled objects?
3. [15 pt] You have just changed the implementation of a private method of class *C*. Do you agree with the following statements? Explain why or why not.
 - (a) You do not have to re-test *C*.
 - (b) You do not have to re-test any subclasses of class *C*.
 - (c) You do not have to re-test any classes that collaborate with *C*.
4. [15 pt] In which type of maintenance (adaptive, corrective, perfective, preventative) would you most likely do the following activities, and why?
 - (a) Split a class into two smaller classes
 - (b) Add a new feature to an application
 - (c) Spend hours trying to remove a defect from an earlier release of the application

5. [16 pt] Consider if the coding phase for a project takes twice as long to complete as planned. Explain the implication of this situation for the following life cycles.

(a) Incremental Model

(b) Waterfall Model

(c) Spiral Model

(d) Recursive Parallel

6. [18 pt] Determine the behavioral model for the following class *Input* representing the input for a calculator. The methods are:

PutDigit (int digit)	<i>The user hit '0' - '9'</i>
PutDecimal ()	<i>The user hit the '.' button</i>
PutEE ()	<i>The user hit the 'EE' button</i>
Clear ()	<i>Reset the value</i>

This class also has a method `GetValue()` that returns the value entered by the user. For example, to create the value 6.23×10^{23} , the user presses 6 . 2 3 EE 2 3.

7. [0 pt] Dilbert Cartoon

8. [10 pt] (a) What is the impact of cohesion on maintenance?

(b) What is the impact of cohesion on reuse?

9. [4 pt] What is the definition of a successful test case?

10. [8 pt] Are object-oriented programs easier to test using Bottom-Up testing or Top-Down testing? Explain Why.