

Comprehensive Exam for Requirements Engineering  
Spring 2005

Student ID \_\_\_\_\_

Each of the questions on the following pages is worth 20 points. Answer the first question and then any 4 of the remaining 6 questions. Please mark below which questions you want graded. Use only the space provided. *Do not attach additional sheets or use the back of the exam.*

Questions to grade (circle the appropriate number): 2 3 4 5 6 7 (If you leave this blank, questions 2-5 will be graded.)

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1. Indicate to the left of each statement whether the statement is True (T) or False (F).  
(20 points)

- \_\_\_\_ 1. Studies have shown that incomplete requirements and lack of user involvement in the requirements process are major contributors to software project failures.
- \_\_\_\_ 2. A requirement should never state what a system will *not* do because the set of things a system will not do is too large.
- \_\_\_\_ 3. It is not only necessary to be able to trace a requirement to a component of the software, but also to trace a software component back to its requirements.
- \_\_\_\_ 4. One should never move into the next lifecycle phase if there are still TBDs (To Be Determined) in the requirements after the Requirements Review has been held.
- \_\_\_\_ 5. Requirements Reviews are generally considered to be a requirements verification technique..
- \_\_\_\_ 6. Selecting a button in a GUI window is a good example of a business or enterprise event.
- \_\_\_\_ 7. Use Cases should be named with verb-phrases.
- \_\_\_\_ 8. Apprenticing with the user to gather requirements tends to bias your view of the work and should not be used as a requirements collection technique.
- \_\_\_\_ 9. The term essence of the system refers to the fundamental reason that the system exists.
- \_\_\_\_ 10. When conducting a brainstorming session, obviously stupid suggestions are to be discarded immediately.

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2. It is an established fact that a requirement defect discovered in later phases of the development lifecycle, e.g., during system test, is much more expensive to correct than those found and fixed during the requirements phase itself. Discuss the activities and techniques that can be used during the requirements phase to discover defects before they become larger problems later in the lifecycle. (20 points)



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4. Provide an example requirement statement for each of the following non-functional requirements types and specify how the requirement is to be tested, i.e., what is the acceptance criterion or criteria for each requirement that you have provided as an example: (20 points)
- performance
  - availability
  - look and feel
  - maintainability

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5. What is a Use Case? How are Use Cases employed to capture and specify requirements?  
(20 points)

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6. What is a requirements baseline? What is the purpose of placing requirements under configuration control? Describe a typical requirements configuration control procedure, i.e., what are the steps in modifying a set of requirements that are under configuration management? (20 points)

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7. Elicitation is the most error prone phase of requirements engineering. Why is this phase so error prone? What can be done to make it less error prone? (20 points)