

Comprehensive Exam for Requirements Engineering
Fall 2004

Student ID _____

Each of the questions on the following pages is worth 20 points. Answer any 5 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): 1 2 3 4 5 6 7 (If you leave this blank, questions 1-5 will be graded.)

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1. Many studies show that Requirements Engineering is often a root cause of software failures. However, requirements engineering is not complex. What are the major causes of the RE problems and how can they be fixed? (20 points)

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2. Examine the following requirements. If there are problems with the requirement, identify the problems and describe how the problems should be corrected. Analyze each requirement independently not as a group. (20 points)
- A. The system shall provide an easy-to-understand user interface.
 - B. When the pressure exceeds 115, the system shall alert the pilot.
 - C. All software shall be implemented using a CMM Level 3 process.
 - D. During emergency conditions, the system shall suspend all non-critical functions.
 - E. The system shall always be available.

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3. What is mean by the phrase “non-functional requirement”? Identify 3 categories of non-functional requirement and provide example requirements statements for each. (20 points)

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4. Structured analysis and Object Oriented analysis are the two most common structured methods used to analyze requirements. Provide a brief description of each and describe the strengths/weaknesses of each. (20 points)

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4. 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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5. 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)

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6. Describe the characteristics of a good requirements document. (20 points)