

Comprehensive Exam for Requirements Engineering
Spring 2003

Each of the following questions shows a point value in parenthesis after the question. Answer any set of questions with a point total of 100 points. Please mark which questions you want graded below. 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 (If you leave this blank, questions 1-4 will be graded.)

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. Please 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 a user-friendly human interface.

B. When the temperature exceeds 500 degrees, the system shall warn all appropriate personnel.

C. All software shall be implemented in C++.

D. Under full load conditions, the response time for a user request shall not exceed 1 second.

E. System availability shall be 100%.

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3. Identify the six major phases of the Requirements Engineering process and provide a brief description of each. (40 points)

A.

B.

C.

D.

E.

F.

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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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5. How does the expected evolution of the software requirements affect selection of software lifecycle? Describe some principles for determining the appropriate software lifecycle based on the expected evolution of the software requirements. (20 points)

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6. 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)