

**SWE Comprehensive Examination****Requirements Engineering**

Student ID:

Each question is worth 20 points.

**Part 1**

Answer all of the following 3 questions.

1. Describe the major phases of the requirements engineering process.  
For each phase describe the objectives of the phase and what happens during the phase's activities.  
Which phase is the most difficult to do correctly and why?
2. Describe how a requirements analyst can ensure that requirements are well formed. In other words, what would be the features of good requirements? Give two examples.
3. Examine the following requirements.  
If there are problems with the requirement, identify the problems and describe how the problems should be corrected.  
Analyze each sentence independently as a single requirements statement.
  - The information system shall provide all data to all users.
  - When the temperature exceeds 25 degrees, the system shall close the valve.
  - The software in the Ground Support Equipment shall be implemented in Java or C#.
  - Under full load conditions, the response time for a user request shall not exceed 2 seconds.
  - The Launch System availability shall be 100%.

**Part 2**

Answer only 3 of the following questions.

1. What is a requirement 'rationale'? Give two reasons why it is important to have requirements rationale.
2. During the software development process a mechanism is required to ensure the requirements are being met. What is this mechanism called and give a description of a way to implement it.
3. Describe both of the common structured methods used to analyze requirements, Structured Analysis and Object Oriented Analysis. What are the strengths and weaknesses of each?
4. Describe the roles and responsibilities of the following participants in the Requirements Engineering process: Customer, Stakeholders, Users, Requirements Analyst. Why is each of these roles necessary for good requirements (give a reason why for each role)?