

ANSWER ANY FIVE QUESTIONS, ALL QUESTIONS HAVE EQUAL WEIGHT

Questions attempted in excess of 5 will not be marked.

CLOSED BOOK and NOTES, ONE 8 ½ X 11 AID SHEET ALLOWED.

Write legibly; unreadable answers are not answers.

1. In lecture it was argued that there was an inherent conflict in trying to construct a software system that simultaneously achieved **all** of the *goals for Good Software*. Describe *several* examples illustrating how this conflict arises.
2. One theme in the lectures is that the processes of developing a software system involves the gradual removal of **uncertainty** in the progression from requirements to specification to design. For each of the development processes *Rapid Prototyping* and *Spiral Model* discuss how uncertainty is removed.
3. You have been hired to perform Requirements Analysis for a software project to develop a new grade processing program for the Department of Computer Science. A grade processing program is used by instructors and tutors to record marks for tests and assignments and to calculate term marks. It is also used by the undergraduate secretary to format and report marks to the Faculty of Arts and Science.
 - a) Give a list of people that you would like to interview to gather input for your requirements analysis. For each person, describe the kind of information that you expect the person should be able to provide, i.e. justify why you want to interview them.
 - b) Give a list of questions that you would like to ask these people. Indicate the *purpose* of each question, i.e. what information you expect to obtain from the answer to each question.
4. Assume you are using Object Oriented Analysis to analyze the grade processing system described in the previous questions. Propose a set of *Objects* that should be modeled. Describe each object carefully including its data content and the operations that it provides.
5. One characteristic that distinguishes large software from small software is the increased amount of formal documentation that is used in a software project. Describe the major pieces of documentation that have been discussed thus far. For each document describe *briefly* the *purpose* of the document and *how* the document is generated.
6. Describe how Data Flow Models and Control Flow Models are used in the analysis of software systems.
7. Pressman describes the Facilitated Application Specification Techniques (FAST) as technique for performing Requirements Analysis.
 - a) Describe how FAST operates, identifying the personnel involved and the method of operation.
 - b) Discuss the specific problems that FAST attempts to address. Describe how it does so.