

ICS52 - Introduction To Software Engineering
Midterm Exam –Fall, 2003

Last Name: _____ First Name: _____

Student ID: _____

1. (20 points, 4 points each) Define the following terms, as used in software engineering:
 - A. Software Process.
 - B. CASE.
 - C. The heterogeneity challenge.
 - D. Beta testing.
 - E. A module's secret.

2. (20 points) Some questions about “requirements validation:”

What is it?

Why is it important?

Name and define one kind of “check” that is made in conjunction with requirements validation.

Name and define one kind of “technique” that is used in conjunction with requirements validation.

3. (5 points) An important part of design is identifying the modules (which often correspond to classes in object-oriented terminology). One approach to doing this is to analyze the words in the natural language requirements specification. Explain briefly how this technique works.

4. (20 points.) Name and briefly define the four fundamental activities identified in the course textbook (Sommerville) as being common to all software processes.

5. (20 points) “Module interfaces should not reveal how the module is implemented.”
Select a desirable software quality discussed in lecture or in the textbook, and show how following this rule leads to software possessing that quality.

Now select a software principle described in lecture, and show how following this rule is in accord with that principle.

6. (3 points) Which of the following activities would be associated with the upper right hand quadrant of the spiral model? (Choose one.)
- A. Acceptance testing.
 - B. Determining objectives.
 - C. Prototyping and resolving risks.
 - D. Developing software requirements.
 - E. Project planning.
7. (3 points) According to the textbook, the most important aspect of a system model is that it (choose the best answer)
- A. is written in an object-oriented language.
 - B. is comprised of sub-systems.
 - C. shows the data-flow of the system.
 - D. leaves out detail.
 - E. is produced using CASE tools.
8. (3 points) An advantage of using a structured language specification is (choose one)
- A. the ease with which it can be translated into a programming language.
 - B. it provides expressiveness, understandability, and uniformity.
 - C. the structured language is easy to learn.
 - D. that it is part of the object-oriented design process.
 - E. All of the above.
9. (3 points) Why is the waterfall model called an “ideal” model? (Choose the best answer.)
- A. It is the best in practice.
 - B. It is an abstract model.
 - C. It is the most likely to result in a successful software system.
 - D. It was the first software process model published.
 - E. It represents the software process as having no imperfections.
10. (3 points) Which of the following is *not* on Boehm’s list of software risk factors?
- A. Personnel shortfalls.
 - B. Incorrect process model.
 - C. Straining computer science capabilities.
 - D. Shortfalls in externally performed tasks.
 - E. Unrealistic schedules and budgets.