

8 questions on 1 page. 100 marks total. 50 minutes total

Answer ANY 5 questions. All questions have equal weight. WRITE LEGIBLY!

One $8\frac{1}{2}$ X 11 Aid Sheet Permitted.

1. You are the Risk Manager for a large software project. One risk you have identified is that over half of the programmers assigned to the project are *part timers*, i.e. over 50% of each individuals time is committed to some other project. How could this risk affect your project? What steps would you recommend to compensate for this risk before and during the project?

2. Describe the special issues that arise in the testing of *Object Oriented* software.
What aspects of testing are easier with O-O software? What aspects are harder?

3. Describe the *orthogonal defect classification* technique.
What software engineering problem is this technique attempting to solve?
Why is this problem important? Has the technique been successful?

4. Boehm's list of Top Ten Project Risks includes:
2. Unrealistic schedules and budgets.
5. Gold plating
6. Continuing Stream of requirements changes
Describe in detail how each of these risks might affect a project.
What are the best ways to avoid/minimize the risk?

5. Assume you are testing a `BigString` function:
`BigString toUpperCase(BigString inString)`

This function converts all of the lower case letters in its argument *inString* to UPPER CASE and returns the modified string as its result.

Describe a suitable set of test cases to **thoroughly** test this function.

6. If you were managing a large software project (i.e. responsible for allocating human and computer resources) what information on the progress of the project would you like to have. How could this information be collected? What would you do to verify the accuracy of the information?

7. Assume that you are trying to solve the same problem addressed by Mills and Baker when they developed Chief Programmer Teams, but that you are doing it in a contemporary programming environment where every programmer has a powerful workstation, everyone is connected via a high speed network, editors and compilers are much more powerful, and there is an almost unlimited amount of files storage available. Describe how you would adapt the Chief Programmer Team concept for contemporary programming environments.

8. Assume that you are managing a software project to develop a software system where the most important goals for the system are (equally)

1. absence of errors
2. minimum development time

Describe the strategies you would use in the requirements definition, specification and design phases of the project in order to try and achieve both of these goals.