

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

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

Non-programmable calculators permitted.

1. Would Rapid Prototyping be a good technique to apply to the CSC408F course project? Justify your answer.

2. One of the goals of Software Engineering is "to improve the **quality** of the software **process**" Discuss what this means in practical terms. How is improvement achieved?

3. The ideal goals of software engineering are:

1. To produce software that is absolutely correct.
2. To produce software with a minimum of effort.
3. To produce software at the lowest possible cost.
4. To produce software in the least possible time.
5. To maximize the profitability of the software production effort.

For non-trivial software, which of these goals would be the easiest to achieve? Justify your answer.

4. Discuss the significance of Stenning's Project Hygiene Principle

Changes should be controlled, visible, and of known scope

Why is this an important principle ?

What steps should be taken during software development to achieve this principle?

5. Describe the activities that would necessary to achieve good *traceability* in a large software project.

6. Assume that instead of being given a detailed description of the Student Scheduling System for the course project, you had been given a brief requirement like:

Develop a computer system to help undergraduate students schedule their courses.

Discuss how you would perform requirements analysis in this situation.

Which people would you want to interview? What questions would you want to ask?

7. Assume you are developing a large software system that you estimate will be about 2,000,000 lines of C code and will take about two years to develop. Your management has given you a reasonable allocation of personnel:

senior software designer/architect	24 person months
junior software designer	96 person months
software developers/testers	400 person months
documentation specialists	45 person months

Describe a strategy for allocating these people over the expected duration of the project.

8. Your team faces several personnel related risks in the course project

1. the risk that a team member will drop the course.
2. the risk that a team member will not do the work that has been assigned to them
3. the risk that a team member will produce poor quality code

Discuss strategies for managing these risks, including identification, prioritization, reduction and resolution.