Software Engineering Comprehensive Exam

Spring Semester 2000

Answer any four of the following six questions. Please mark which questions you want graded below. Use only the space provided. *Do not attach additional sheets or use the back of the exam*.

Questions to grade (circle the appropriate number): **1 2 3 4 5 6** (If you leave this blank, questions 1-4 will be graded.)

1. A software company has asked you to settle a dispute among its engineers. The company is considering acquiring a reusable code library and some of its engineers are arguing that this will save time and money. Another group of engineers considers this to be a dangerous and potentially more expensive solution. State the procedure you would use to resolve this conflict. Justify your answer.

2. Modern computer languages do not fully support developing software engineering technology. State two reasons this is true and identify the features that must be added to languages to correct these deficiencies.

3. Name the five phases of the software engineering lifecycle. Which phase do you believe is the most expensive? Justify your answer.

4. What are the major causes of failure in modern software? What changes must be made in the software development process to correct these deficiencies?

5. What is abstraction? How does abstraction help to make software more robust and easier to debug? What are the pitfalls of abstraction? How are elaboration (decomposition) and abstraction related and what does that have to do with software engineering?

6. What is software cohesion? How can it be measured? Is high cohesion good or bad and why?