Software Engineering Comprehensive Examination
Spring, 2003

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

Circle the question numbers to grade: 1 2 3 4 5 6 (If you leave this blank, questions 1-4 will be graded.)

1. Compare and contrast two lifecycle models. What advantages and disadvantages does each model have over the other?
2. A basic algorithmic model is \( \text{Effort} = A \times \text{Size}^B \times M \). What are the variables \( A, B, \text{Size} \) and \( M \) used for? What is one of the major problems of estimation and how is it affected over a project's lifetime?
3. Simplistically, software engineering risks can be categorized into three different types. Identify these types and list 3 examples of each.
4. What are some objectives in holding a Software Technical Review, e.g., code review, inspection? What preparations, if any, are needed prior to a review? What are some guidelines for conducting a review? What information should be recorded during and at the conclusion of a review?
5. Define the concept of Module Coupling? Why is Module Coupling considered an important software attribute? Identify and define 2 types of Module Coupling. Identify 2 metrics that are used to measure the degree of Module Coupling.
6. Describe “Top-Down Software Integration and Test” and “Bottom-Up Software Integration and Test”. Outline the steps to be performed in each approach. Identify 3 strengths and 3 weaknesses of each approach.