

Seventh semester examination-2006 SOFTWARE ENGINEERING

Full marks-70

Time-3hrs

*Answer Question No.1 which is compulsory and any five from the rest.**The figure in the right side margin indicates the mark.*

1. Answer the following questions [2x10]
 - a) What does software maintainability really mean?
 - b) How do you go about measuring software productivity?
 - c) How do you measure the degree fmodel/class cohesion?
 - d) What are the four P's of software engineering?
 - e) How can one measure software reliability?
 - f) What is the purpose of correlation analysis?
 - g) How can one measure the quality of software?
 - h) Which are the 7 standard Software Quality Characteristics?
 - i) What is the new **COCOMO-II** formula for calculating project effect?
 - j) Give at least three of the influence factors in the Function Point method?
2.
 - a) Define Software engineering. Outline the structure of software engineering environment and describe the role of the components in that structure? [5]
 - b) Discuss the differences between object oriented and function oriented design? [5]
3.
 - a) Explain the difference between external design architectural design and detailed design with example? [5]
 - b) What is a legacy Software product? What are the problems one would encounter while maintaining a legacy product [5]
4.
 - a) Describe the various strategies of design. Which design strategy is most popular and practical?
 - b) Schematically draw the architecture of a case environment and what are the different tools integrated.
5.
 - a) What do you understand the terms cohesion, coupling and adaptability? Explain why minimizing cohesion and coupling leads to more maintainable systems?
 - b) What do you understand by Cyclomatic complexity? Discuss the various strategies used in the process of Control structure testing?

6. a) Discuss the impact and importance of testing in the process of Software engineering? If you could select only three test case design method to apply during unit testing, what would they be and why? [5]
- b) Define and differentiate between software validation and verification. Who should perform the validation test the software developer or the software user? Justify your answer? [5]
7. a) Explain the various steps in cost estimation procedure using COCOMO.
- b) Discuss the relative merits of ISO 9001 certification and SEI CMM-based quality assessment [5]
8. a) Give a system size of 5KDSI, a productivity of 0.5KDSI per PM, a quality factor of 1.16 and a Scaling factor of 1.17, what is the effort for a standalone PC-Application according to COCOMO-II.
- b) What is the difference between black box testing and white box testing?
- c) What is six sigma quality initiative?
- d) Define and differentiate between n CASE environment and CASE tools. [2.5x4]

