



PAPER ID : 1070

TCS-406 TIT - 406

Printed Pages : 3

Paper ID and Roll No. to be filled in your Answer Book

Roll No.

--	--	--	--	--	--	--	--	--	--

B. Tech.

(SEM. IV) EXAMINATION, 2011

SOFTWARE ENGINEERING

Time : 3 Hours]

[Total Marks : 50

Note : Attempt all questions as per directions given thereof.
All questions carry equal marks. Be precise in your answer.

1 Attempt any four of the following : $4 \times 2.5 = 10$

- (a) Define the term Software Engineering. List the various applications of Software Engineering also.
- (b) Compare and contrast Water Fall model and Prototype model.
- (c) What is Software Crisis? List the various reasons for the "software crisis"? Also, discuss the significance of software crisis in reference to software engineering discipline?
- (d) Illustrate the Spiral Model along with its advantages and disadvantages.
- (e) List the various characteristics of Software and explain them in detail.
- (f) Explain the various components of software in detail.

2 Attempt any four of the followings : $4 \times 2.5 = 10$

- (a) Illustrate the significance and use of requirement engineering. What are the problems in formulation of requirements?
- (b) Describe the various requirement elicitation techniques. Which one is most popular and why?
- (c) What is the significance of Feasibility in Software Development? Explain the various types of Feasibility in detail.
- (d) Define the term Entity-Relationship (E-R) Diagram. Draw the E-R Diagram for the course registration process of students.
- (e) What is Software Quality Assurance (SQA)? Illustrate the various features of SEI-CMM-Model.
- (f) List the main features of ISO Quality standards.

3 Attempt any two of the followings : $2 \times 5 = 10$

- (a) What are the importances of Software Requirement Specification (SRS) in Software Project Development? List the various steps of IEEE Standard of SRS.
- (b) What is modularity? List the important properties of a modular system design. Describe the objectives of modular software design.
- (c) What is Software Measurement and Metrics? Illustrate the Function Point Based Measures and Cyclomatic Complexity Measures with a suitable example.

4 Attempt any two of the followings : $2 \times 5 = 10$

- (a) Differentiate between followings:
 - Object Oriented and Function Oriented Design
 - Coupling and Cohesion

- Verification and Validation
 - Top-Down and Bottom-Up Design
- (b) Explain Structured Design Methodology in detail. Explain how size-oriented metrics differ from function-oriented metrics. Discuss the advantages and disadvantages of each, and application areas that are suitable for the use of each of these metrics.
- (c) What is Software Maintenance ? Explain its significance in Software. Describe the various types of maintenance in detail.

5 Attempt any **two** of the followings : **2×5 =10**

- (a) Discuss the structure testing. How it is different from functional testing?
- (b) Discuss the COCOMO II model with its different types. Also give the equation for effort calculation in all cases. Suppose a project is to be developed in organic mode you have estimated the size of product to be about 100,00 LOC. Compute the nominal effort and development time.
- (c) Write short notes on the following:
- Top-Down and Bottom-Up testing
 - Black box and White box testing
 - Regression and Acceptance testing
 - Unit and Integration testing.