CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Sixth Semester of B. Tech. Examination (IT/CE)
May 2012
IT-307 Software Engineering (S.E.)

Date: 10.05.2012, Thursday **Time: 01:30 p.m. To 04:30 p.m.** **Maximum Marks: 70**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Rough work is to be done in the last page of main supplementary, please don't write anything on the question paper.
5. Indicate clearly, the option(s) you attempt along with its respective question no.
6. Figures to the right indicate marks.

SECTION-I

Q-1 **Answer the following questions.**

1. Give reasons of why software engineering is different from and harder to manage than other engineering discipline. 3
2. What is the difference between the system life cycle and a system development methodology? What is the critical distinction between a milestones and deliverables? 4
3. Why SRS is document also known as black box specification of a system? What are the contents of SRS? 4

Q-2

[A] What is preliminary investigation? Who does it? What is the purpose of preliminary investigation? 4

[B] In what situations you will use waterfall model? Justify your answer. Name the risk based software development process model? What are its advantages and disadvantages? 4

OR

[B] What do we mean by software process model? Why we need it? Distinguish between software product and a software process. Name four process models that are used to develop large software systems. 4

[C] What are the major phases of the entire life of the software? Specify the percentage of efforts required on each phase. Which phase requires the maximum efforts? Which phase(s) is/are more creative? 4

OR

[C] To judge the feasibility of a project, a proposal must pass all the feasibility tests otherwise it is not a feasible project. What are those tests? Explain each of them in brief. 4

Q-3

[A] What do you mean by software testing? What do you mean by debugging? Enlist and explain the various testing and debugging techniques in brief. 4

[B] How to transform analysis into the design? What do you mean good design? What are the contents of good design document? 4

OR

[B] Why is it important to develop cost and schedule estimates during planning before software requirement analysis or design conducted? 4

[C] What is the difference between Audit and Formal Technical Review (FTR)? Can their function be folded in to the review? What are the prons and cons? 4

SECTION-II

Q-4

1. Is it true that "High quality software process should lead to high quality software products"? Justify. 3
2. Discuss how software quality can be achieved during software development. 4
3. What are the software configuration management tasks? Define and discuss each of them. 4

Q-5

[A] Explain why program inspections are an effective technique for discovering errors in a program. What purpose do "walkthrough" serve? How do we accomplish this? 4

[B] What are the attributes of a successful software project manager? Which are the primary functions, software managers perform? 4

[C] What do you mean by Debugging? Explain various Debugging Techniques. Also explain Integration Testing in brief. 4

OR

Q-5

[A] Differentiate between: White Box Testing Methodology and Black Box Testing Methodology. 4

[B] An organization is assessed at Level 4 of SEI CMM, what can be inferred about the current quality practices at the organization? What does the organization has to do to reach SEI CMM Level 5? 4

[C] What is a Function Point? How can the software size for the application be estimated in the function points? Using FP count, how the efforts can be estimated, provided various productivity means are given. 4

Q-6

[A] What do you mean by LIP, CFG and McCabe's Cyclomatic Metric? How to find each one of them? How are they related? Explain by taking a suitable example. 4

[B] Discuss merits and demerits of ISO 9001 and SEI CMM certification. 4

OR

[B] Define the term error, fault and failure and describe how they relate to each other. 4

[C] What is the difference between a revision and a version? What do you mean by version control? 4

OR

[C] Heavy maintenance and quality of software are inversely proportional. Elaborate. Why software maintenance is much more complex than hardware maintenance? 4