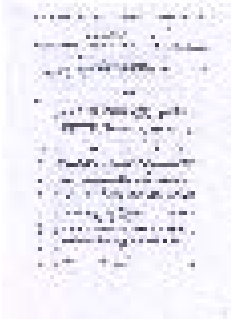

# CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

**Sixth Semester of B. Tech. Examination (IT/CE)**
**May 2013**
**IT307 Software Engineering (S.E.)**

**Date: 03.05.2013, Friday** **Time: 10:00 a.m. To 01:00 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. How is the project cost estimated? What are some of the factors which make it hard to accurately estimate the cost of the software projects? 4
2. Which are the major software risks? How risk analysis and management can be done? 3
3. Narrate the relationship between people and efforts. How is the project schedule developed? State the process of building and monitoring schedules for software development projects. 4

**Q-2**

[A] What is a milestone? What is a deliverable? What are the contents that are included in the deliverable? 4

[B] Why is it difficult to gain a clear understanding of what the customer wants? What can be done if the requirements are changing continuously? Which process model is suitable in that case? Justify. 4

**OR**

[B] "*Quality*, *reliability* and *safety* are related concepts, but are fundamentally different in a number of ways". Discuss in brief. 4

[C] Explain "why system analyst needs to understand how people think, how they learn, how they react, how they change, how they communicate and how they work". Justify your answer. 4

**OR**

[C] What do you mean by software life cycle model(s)? Is it compulsory to follow it while developing a project? Explain in brief. 4

**Q-3**

[A] What are the various approaches to SQA (Software Quality Assurance)? 4

[B] What is requirement engineering? What are the activities related to it? What is requirement elicitation? Explain any one technique in brief. 4

**OR**

[B] What is the content of the design document? What are the considerations and importance of good software design? How would you differentiate good design from a bad design? 4

[C] What is preliminary investigation? Who does it? What are the purposes of preliminary investigation? Which are the fact finding techniques? 4

## SECTION-II

**Q-4**

1. Define software and software engineering. What are the characteristics of software? **4**
2. What is/are the difference(s) between architecture and framework of software systems? What roles architecture can play in the development of software systems? **4**
3. What do you mean by functional independence, cohesion and coupling in the context of software design? **3**

**Q-5**

[A] Explain the need for software measures. Explain how LOC metric is related to FP based metric and COCOMO metric. **4**

[B] What do you mean by software maintenance? What are the different types of maintenance that a software product might need? **4**

[C] Briefly highlight the difference between "code walk-through" and "code inspection". Compare the relative merits and demerits of the same. **4**

**OR**

**Q-5**

[A] Discuss potentialities and limitations of ISO 9001 and CMM certifications. **4**

[B] What do you mean by cyclomatic complexity? What are the various ways to calculate cyclomatic complexity? **4**

[C] What do you mean by software reverse engineering? How to apply cosmetic changes on the code? **4**

**Q-6**

[A] Briefly explain boundary value analysis and Equivalence class partitioning with respect to black box testing methodology with an example. **4**

[B] Is CMM certification given to the organization as a whole or separately to each and every department centre of the software organization? Elaborate. Is it given for the processes (process improvements) or for the products (product improvements) of the organization? Justify. **4**

**OR**

[B] How do you ensure such reusability? Why do we need software reusability? What do you understand by component based software engineering? Is there any relationship between software reengineering and reusability? **4**

[C] What are the steps in testing cycle? What are the key challenges of software testing? **4**

**OR**

[C] Why it is advantageous to detect errors during code and design reviews rather than leaving them to detect at the time of testing? Justify the statement: If you want to improve the software, doesn't test more develop in a better way. **4**