

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]  
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**M. Tech 3rd Semester Examination**  
**Advance Software Engineering Concepts (NS)**  
**CSE1-E01/MT-302**

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt one question from each section. Section E is compulsory. Each question carry equal marks.

**SECTION - A**

1. What are the different phases of software development life cycle? (20)
2. (a) How iterative enhancement model is helpful during maintenance? Explain various stage cycles of this model.  
(b) What are the major uses of a requirement specification document? In what ways these uses affect the style and content of a requirement document. (10+10=20)

**SECTION - B**

3. (a) Explain the notion of coupling and cohesion in the context of structured design.  
(b) Consider the software project which is developed by using waterfall model. How one can test this project and which test process is best to test this case? (10+10=20)

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4. (a) Define the term object oriented modeling. In this context, what does UML provide to designers? What it doesn't provide? Discuss, what the object modeling might look like today if UML had not been developed.  
(b) What is dynamic modeling? Explain with example. (10+10=20)

**SECTION - C**

5. How software maintenance is different from software development? Explain in detail the various techniques used for software maintenance. (20)
6. (a) Explain Block design.  
(b) What is the difference between verification and validation? Which types of testing address verification? Which types of testing address validation? (10+10=20)

**SECTION - D**

7. Explain the relationship between the design and implementation. Why is it important to match the implementation to the design? What would you do to keep the two consistent? (20)
8. (a) What is software reliability? What are the different model for software reliability? Explain with example.  
(b) Explain Six Sigma Model. How it is used in project development? (10+10=20)

**SECTION - E**

9. Differentiate between the following:  
(i) Black box testing and white box testing.  
(ii) Fault based testing and Error based testing.  
(iii) Software quality and reliability.  
(iv) Throwaway prototyping and evolutionary prototyping. (4×5=20)