



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

III B.Tech I Sem Regular End Examination, December 2022

Software Engineering (CSC, CSD, CSE, CSI, CSM, IT)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part - A, answer all questions which carries 20 marks.

3. In Part - B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

1. a) What is software? What are the development lifecycle phases? 2M CO1 BL1
- b) What are the advantages of iterative development? 2M CO1 BL1
- c) Describe the specifications used to specify requirements. 2M CO2 BL2
- d) What are the advantages of iterative development? 2M CO2 BL1
- e) List the principles of a software design 2M CO3 BL1
- f) Define maintenance. What are the types of software maintenance? 2M CO3 BL1
- g) What are strategic issues in software testing? 2M CO4 BL1
- h) Will exhaustive testing guarantee that the program is 100% correct? Explain 2M CO4 BL4
- i) List a few process and project metrics 2M CO5 BL1
- j) Can a program be correct and still not exhibit good quality? Explain 2M CO5 BL4

PART- B**(10*5 Marks = 50 Marks)**

2. a) Give the characteristics of software that make it separable to hardware. 5M CO1 BL1
- b) What process adaptations are required if the prototype will evolve into a deliverable system or product? What are the advantages and disadvantages of developing software in which quality is "good enough"? That is, what happens when we emphasize development speed over product quality? 5M CO1 BL1

OR

3. a) Discuss about the capability maturity model integration (CMMI). 5M CO1 BL2
- b) Explain Water fall Model. What are the problems that are sometimes encountered when the waterfall model is applied 5M CO1 BL2
4. a) Requirements analysis is unquestionably the most communication intensive step in the software engineering process. Why the communication path does frequently breaks down? 5M CO2 BL2
- b) What is the need of requirement analysis? What are the problems that arise during requirement analysis? 5M CO2 BL1

OR

- 5 a) How are the concepts of coupling and software portability related? Provide examples to support your discussion. Using the architecture of a house or building as a metaphor, draw comparisons with software architecture. How are the disciplines of classical architecture and the software architecture similar? How do they differ? 5M CO2 BL2
- b) Explain about requirements elicitation and analysis. 5M CO2 BL1
- 6 a) Discuss the structured methods in system models. 5M CO3 BL2
- b) Consider one of the following interactive applications (or an application assigned by your instructor): 5M CO3 BL3
- A desktop publishing system
 - A computer-aided design system
 - An interior design system
 - An automated course registration system for a university
 - A library management system
 - An Internet-based polling booth for public elections
 - A home banking system
 - An interactive application assigned by your instructor
- Develop a user model, design model, mental model, and an implementation model, for any one of these systems.
- OR**
- 7 a) Explain about the design process and design quality. 5M CO3 BL3
- b) Discuss in detail about architectural styles and patterns. 5M CO3 BL2
- 8 a) Explain the difference between verification and validation. Do both make use of test-case design methods and testing strategies? 5M CO4 BL4
- b) Explain in detail about cyclomatic complexity with an example. 5M CO4 BL5
- OR**
- 9 a) The following program is to be tested for statement coverage: 5M CO4 BL5
- ```
begin
 if (a== b) {S1; exit;}
 else if (c== d) {S2;}
 else {S3; exit;}
 S4;
end
```
- The test cases T1, T2, T3 and T4 given below are expressed in terms of the properties satisfied by the values of variables a, b, c and d. The exact values are not given. T1 : a, b, c and d are all equal T2 : a, b, c and d are all distinct T3 : a = b and c != d T4 : a != b and c = d Which test suites ensures coverage of statements S1, S2, S3 and S4?
- b) Define maintenance. Describe various methods of estimating maintenance cost. 5M CO4 BL2
- 10 a) Discuss in brief about software risks, risk projection. 5M CO5 BL2
- b) Explain about RMMM, RMMM plan with an example. 5M CO5 BL4
- OR**
- 11 a) Describe how you would assess the quality of a university before applying to it. What factors would be important? 5M CO5 BL2
- b) Write about capability maturity model and how it is used for software quality. 5M CO5 BL1