

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-GURUJADA VIZINAGARAM
II B. Tech I Semester Regular Examinations, November – 2024
SOFTWARE ENGINEERING
(COMPUTER SCIENE & ENGINEERING)

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

Question paper consists of Part A, Part B.
Part A is compulsory, Answer all questions.
In Part B, Answer any one question from each unit.

PART-A**(20 Marks)**

- 1 a) What is the Waterfall model in software engineering? [2]
- b) Define Rapid Application Development (RAD). [2]
- c) What is COCOMO and how is it used for project estimation? [2]
- d) Explain the purpose of Software Requirements Specification (SRS). [2]
- e) What are the key characteristics of a good software design? [2]
- f) Describe the concept of cohesion in software design. [2]
- g) What is the purpose of code review in software development? [2]
- h) List any two differences between Black-box testing and White-box testing [2]
- i) What is Software Maintenance and why is it important? [2]
- j) Define CASE tools and their role in the software development life cycle. [2]

PART-B**(50 Marks)****Unit-1**

- 2 a) Explain the evolution of software engineering and the changes in software development practices. [5]
 - b) Describe the Spiral model of software development. [5]
- (OR)
- 3 a) Discuss the concept of software life cycle and its stages. [5]
 - b) Explain Agile development and its advantages over traditional models. [5]

Unit-2

- 4 a) What are the challenges in software project management? Explain the responsibilities of a software project manager. [5]
 - b) Explain Empirical Estimation techniques and the COCOMO model for software cost estimation. [5]
- (OR)
- 5 a) Explain the process of requirements gathering and analysis in software projects. [5]
 - b) Discuss different methods for system specification, such as axiomatic and algebraic specifications. [5]

Unit-3

- 6 a) What are the key principles for good software design? Explain Layered design and its importance. [5]
 - b) Discuss Extreme Programming (XP) and its focus on Agile methodologies. [5]
- (OR)
- 7 a) Describe the SA/SD methodology and how DFDs are developed in software analysis. [5]
 - b) Explain the importance of user interface design and the types of user interfaces in software systems. [5]

Unit-4

- 8 a) Explain the different types of testing strategies: Black-box testing, White-box testing, and integration testing. [5]
- b) Discuss the importance of debugging and program analysis tools in software development. [5]

(OR)

- 9 a) What is software reliability, and how does statistical testing contribute to it? [5]
- b) Explain the concept of software quality management and the role of ISO 9000 standards. [5]

Unit-5

- 10 a) Explain the scope of CASE tools and their role in supporting different phases of the software life cycle. [5]
- b) Discuss the concept of software reuse and the challenges involved in adopting reuse practices. [5]

(OR)

- 11 a) What are the steps involved in software maintenance? Explain the process of reverse engineering. [5]
- b) Define software reuse and explain the benefits and issues in implementing a reuse program. [5]
