

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE Regular/Supplementary Winter Examination – 2024

Course: Computer Engineering **Subject Code & Name:** BTCOC503: Software Engineering **Branch:** Computer Engineering **Semester:** V

Time: 3 Hours **Max. Marks:** 80

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary.

Q.1 Multiple Choice Questions (1 mark each):

1. Which of the following is NOT a key principle of software engineering? a) Abstraction b) Decomposition c) Iteration d) Complexity (1)
2. A software requirements specification (SRS) document primarily aims to: a) Describe the design of the software. b) Detail the testing procedures. c) Define what the software should do. d) Explain how the software will be built. (1)
3. Which model is best suited for projects with evolving requirements? a) Waterfall b) Spiral c) RAD d) Agile (1)
4. What is the purpose of requirements validation? a) To gather requirements. b) To verify the completeness and consistency of requirements. c) To design the software architecture. d) To test the software. (1)
5. Use case diagrams are primarily used to model: a) System architecture b) Data flow c) System interactions with actors d) Class relationships (1)
6. Which of the following is NOT a type of software testing? a) Unit testing b) Integration testing c) System testing d) Requirement gathering (1)
7. What does UML stand for? a) Unified Modeling Language b) Universal Modeling Language c) Unified Machine Language d) Universal Machine Language (1)
8. Which diagram in UML shows the static structure of a system? a) Sequence diagram b) Activity diagram c) Class diagram d) Use case diagram (1)
9. A software project's scope is defined in which phase? a) Design b) Testing c) Implementation d) Planning (1)
10. Which of the following is a risk management technique? a) Prototyping b) Waterfall model c) Risk assessment and mitigation d) Code review (1)
11. What is the main goal of software configuration management? a) To manage the project schedule. b) To manage changes to the software. c) To manage the software budget. d) To manage the software team. (1)

12. Which model emphasizes iterative development and incremental delivery? a) Waterfall b) Spiral c) Agile d) RAD (1)

Q.2 (UNIT 1):

A) Define software engineering and explain its importance in developing high-quality software. (6) B) Discuss the various software development life cycle (SDLC) models, highlighting their advantages and disadvantages. (6)

Q.3 (UNIT 2):

A) Explain the process of requirements elicitation, including different techniques used for gathering requirements from stakeholders. (6) B) Describe the different types of software requirements (functional and non-functional) with examples. (6)

Q.4 (UNIT 3): Solve any TWO of the following:

A) Explain the concept of system modeling and its role in the software development process. (6) B) Describe different types of UML diagrams used for system modeling, giving examples of their application. (6) C) Discuss the importance of behavioral modeling in software development and illustrate with an example. (6)

Q.5 (UNIT 4): Solve any TWO of the following:

A) Explain different software testing techniques and their objectives. (6) B) Describe the various levels of software testing (unit, integration, system, acceptance). (6) C) Discuss the importance of test-driven development (TDD) in improving software quality. (6)

Q.6 (UNIT 5): Solve any TWO of the following:

A) Explain the concept of software configuration management (SCM) and its importance in software projects. (6) B) Discuss various version control systems and their benefits in managing software changes. (6) C) Describe the different phases involved in the software deployment process. (6)