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

Course: Computer Engineering
Subject Code & Name: BTCOC501: Software Engineering
Branch: Computer Engineering
Semester: V

Time: 3 Hours Max. Marks: 60

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) Duplication d) Modularity (1)
2. Requirements elicitation is the process of: a) Designing the software architecture. b) Gathering information about user needs. c) Testing the software. d) Deploying the software. (1)
3. A software requirements specification (SRS) document primarily aims to: a) Describe the software's internal design. b) Detail the software's testing procedures. c) Define the software's functionality and constraints. d) Explain the software's deployment strategy. (1)
4. Which model is best suited for projects with evolving requirements? a) Waterfall model b) Spiral model c) V-model d) Prototyping model (1)
5. What does UML stand for? a) Unified Modeling Language b) Universal Modeling Language c) User Modeling Language d) Unique Modeling Language (1)
6. A use case diagram primarily depicts: a) The system's internal structure. b) The interactions between actors and the system. c) The system's data flow. d) The system's class hierarchy. (1)
7. Which of the following is a common risk management technique? a) Code reviews b) Risk avoidance c) Unit testing d) Integration testing (1)
8. Software testing aims to: a) Prove the software is bug-free. b) Find defects in the software. c) Improve the software's performance. d) Design the software's user interface. (1)
9. What is the primary purpose of software configuration management? a) To manage project risks. b) To manage changes to the software. c) To manage the software testing process. d) To manage the software development team. (1)

10. Agile methodologies emphasize: a) Extensive documentation. b) Sequential development phases. c) Iterative development and collaboration. d) Rigid project plans. (1)
11. Which of the following is a type of software maintenance? a) Adaptive maintenance b) Corrective maintenance c) Perfective maintenance d) All of the above (1)
12. What is a key characteristic of a good software requirement? a) Ambiguous b) Vague c) Unambiguous d) Unverifiable (1)

Q.2: (UNIT 1: Requirements Engineering)

A) Explain the concept of requirements engineering and its importance in software development. (6)

B) Discuss various requirements elicitation techniques with examples. (6)

Q.3: (UNIT 2: Software Requirements Specification)

A) Describe the structure and contents of a typical Software Requirements Specification (SRS) document. (6)

B) Explain the importance of requirements validation and various techniques used for validating requirements. (6)

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

A) What is system modeling? Explain its significance in software development. (6)

B) Describe the different types of UML diagrams with their purposes. (6)

C) Explain the concept of behavioral modeling with suitable examples. (6)

Q.5: (UNIT 4: Software Design and Architecture) Solve any TWO of the following:

A) Explain different architectural patterns and their suitability for different types of applications. (6)

B) Discuss the importance of design principles like modularity, abstraction, and information hiding in software design. (6)

C) Describe the process of designing a user interface with considerations for usability and accessibility. (6)

Q.6: (UNIT 5: Software Testing and Quality Assurance) Solve any TWO of the following:

A) Explain different levels of software testing (unit, integration, system, acceptance) with examples. (6)

B) Discuss various software quality attributes and metrics used to assess software quality. (6)

C) Describe different testing techniques, such as black-box and white-box testing, and their applications. (6)
