



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 4 Examination in Engineering: September 2023

Module Number: EE4254

Module Name: Software Engineering Principles

[Two Hours]

[Answer all questions]

Instructions for candidates

- The paper consists of two parts, Part I: MCQ and Part II: Essay
- You should first answer Part I on this paper itself.
- Part I will be collected after 45 minutes.
- Each MCQ question carries 0.5 marks.

PART I

- 1) Which phase of the Software Development Life Cycle (SDLC) is Quality Assurance (QA) typically involved in?
 - a) Requirements gathering
 - b) Design
 - c) Coding
 - d) All of the above
- 2) Which type of testing is focused on finding defects in individual components or units of code?
 - a) Unit testing
 - b) Integration testing
 - c) System testing
 - d) User acceptance testing
- 3) What is the purpose of regression testing?
 - a) To test new features in the software
 - b) To ensure that previously fixed defects have not reoccurred
 - c) To validate the software against user requirements
 - d) To test the software on different platforms
- 4) Which type of testing evaluates the software's ability to handle a large volume of data?
 - a) Stress testing
 - b) Performance testing
 - c) Compatibility testing
 - d) Usability testing
- 5) Which testing phase typically involves end-users or clients and focuses on validating that the software meets their requirements?
 - a) Alpha testing
 - b) Beta testing
 - c) System testing
 - d) Regression testing

- 6) What is the primary goal of software Quality Assurance (QA)?
- Finding defects in the software
 - Ensuring software meets user requirements and standards
 - Reducing software development costs
 - Achieving a faster time-to-market
- 7) Which of the following is not a valid phase of SDLC (Software Development Life Cycle)?
- Testing phase
 - Requirement phase
 - Deployment phase
 - Testing closure
- 8) What are the different levels of Testing?
- Integration testing
 - Unit testing
 - System testing
 - All of the above
- 9) Which of the following is not a part of the Test Plan?
- Schedule
 - Risk
 - Incident reports
 - Entry and exit criteria
- 10) What does the acronym "ISO" stand for in the context of software quality standards?
- International Software Organization
 - Information Systems Organization
 - International Organization for Standardization
 - Internal Systems Operations
- 11) Which is not an Agile method in software development process?
- Feature driven development
 - Prototype model
 - Dynamic system development method
 - Extreme programming
- 12) Which sentence is not a principle of Agile process?
- Highest priority is to satisfy the customer through early and continuous delivery
 - New Changes are accompanied after project delivery
 - Team will deliver working software frequently
 - Business team and developers must work together daily throughout the project
- 13) According to Agile Manifesto, what is the correct combination?
- Replacing process and tools with individuals and interactions
 - Replacing the comprehensive documentation with working software
 - Make contract negotiations to signed contract reviews
 - Consider making a plan in responding to business changes

- 14) What are the 3 pillars of scrum?
- a) Transparency, Adaptation, Inspection
 - b) Transparency, Adaptation, Frequency
 - c) Transparency, Continuous Delivery, Inspection
 - d) Frequency, Adaptation, Continuous Delivery
- 15) Which of the following is not a scrum value?
- a) Commitment
 - b) Openness
 - c) Courage
 - d) Delivery
- 16) Select the correct answer from following according to scrum framework events, artifacts and roles, respectively.
- a) ScrumMaster, Burndown Chart, Product Owner
 - b) Sprint Planning, Development team, Sprint backlog
 - c) Daily Scrum, Product backlog, Development team
 - d) Sprint Review, ScrumMaster, Development team
- 17) What is the correct answer for general sprint cycle, team size and daily scrum meeting?
- a) 30 days, 8 people, not exceeding 40 minutes
 - b) 25 days, 7 people, exceeding 30 minutes
 - c) 30 days, 9 people, not exceeding 30 minutes
 - d) 28 days, 10 people, not exceeding 35 minutes
- 18) Which one is not a benefit of Scrum Agile process?
- a) The product is broken down into a set of manageable tasks
 - b) Unstable requirements drag the sprint to expand
 - c) The whole team have visibility of everything required in the sprint
 - d) Customers see on-time delivery of increments
- 19) What are the 3 basic building blocks of Unified Modeling Language (UML)?
- a) Things, Concepts and Relationships
 - b) Grouping, Interactions and Models
 - c) Things, Diagrams and Relationships
 - d) Diagrams, Interactions and Collections
- 20) What are the components in DevOps Adoption related to stakeholders (people) engagement?
- a) Continuous Monitoring, Continuous Testing, Continuous Development
 - b) Continuous Planning, Continuous Monitoring, Continuous Testing

- c) Continuous Deployment, Continuous Planning, Continuous Feedback
 - d) Continuous Planning, Continuous Feedback, Continuous Monitoring
- 21) What is the main objective of using naming conventions in programming?
- a) Appearance of the source code
 - b) Memory allocation of a system
 - c) Clarity and readability of the code
 - d) Making the code run faster
- 22) What is the main purpose of SOLID principles in object-oriented programming?
- a) Make it faster
 - b) Make it reusable and maintainable
 - c) Make it readable
 - d) Make it smaller in size
- 23) Which of the following example is indicative of a bad comment practice in clean coding?
- a) `///
//This method calculates the employee's yearly salary"`
 - b) `///
// Incrementing i after calculating salary"`
 - c) `///
// Compensate for border"`
 - d) `"i++; // Incrementing i"`
- 24) How does the use of 'magic numbers' affect the readability of the code?
- a) Increases code readability
 - b) Decreases code readability
 - c) Doesn't affect code readability
 - d) Augments the performance of the code
- 25) In clean code principles, what does the Open-Closed principle mean?
- a) Code should be open for addition but closed for modification
 - b) Code should be closed for addition but open for modification
 - c) Code should be open for both addition and modification
 - d) Code should be closed for both addition and modification
- 26) What is a suitable refactoring technique when multiple methods have similar arguments?
- a) Extract method
 - b) Rename method or variable
 - c) Remove dead code
 - d) Parameter object
- 27) What is the purpose of using 'Code Beautifiers'?
- a) Hunt for hidden bugs and errors in the code
 - b) Auto-format the source code to match a set style guide
 - c) Change the functionality of existing code
 - d) Beautify the UI of the application
- 28) Which of the following tool cannot be considered as a part of software documentation?
- a) Project Proposals
 - b) Jira tickets

- b) Emails
 - d) Confluence
- 29) Which of the following is not a valid naming convention?
- a) Camel Case
 - c) Snake Case
 - b) Pascal Case
 - d) Snail Case
- 30) How do 'well-named' constants help to improve the code quality?
- a) They increase memory usage
 - b) They make the code harder to understand
 - c) They eliminate the need of comments explaining their purpose
 - d) Both b and c