

100 Multiple Choice Questions Software Engineering

Sou Chanrojame

December 4, 2025

Section 1: Conceptual Foundations (Questions 1-25)

1. Which of the following is NOT a challenge of learning software engineering?

- A) Complexity of software systems
- B) Abstract nature of software
- C) Static technology landscape
- D) Team dependency

2. What is a key success factor in software development?

- A) Changing requirements frequently
- B) Clear and frozen requirements
- C) Minimal user involvement
- D) Immature technology adoption

3. Which factor commonly leads to software development failure?

- A) Strong stakeholder involvement
- B) Realistic schedules
- C) Scope creep
- D) Proper planning

4. In traditional Waterfall methodology, when does testing occur?

- A) Throughout development
- B) At the beginning
- C) At the end
- D) During requirements phase

5. Which characteristic describes Modern Agile development?

- A) Linear phases
- B) Rigid requirements
- C) Iterative development
- D) Documentation-driven

6. What does “Shift-Left Testing” mean?

- A) Testing only at the end
- B) Testing early and often
- C) Moving testers to different teams
- D) Postponing testing

7. Which is an attribute of high-quality software?

- A) High resource consumption
- B) Difficult to modify
- C) Maintainability
- D) Platform-specific only

8. Software validity refers to:

- A) Building the product right
- B) Building the right product
- C) Testing without failures
- D) Code efficiency

9. Software reliability is identified through:

- A) User acceptance testing only
- B) Stress testing and MTBF tracking
- C) Requirements reviews
- D) Design documents

10. Which is a key characteristic of a professional software engineer?

- A) Working in isolation
- B) Resisting new technologies
- C) Lifelong learning
- D) Avoiding communication

11. What is technical debt?

- A) Money owed to developers
- B) Cost of choosing easy solutions over better approaches
- C) Budget overruns
- D) Hardware expenses

12. Which testing type is manual testing good for?

- A) Load testing
- B) Regression testing
- C) UI/UX and exploratory testing
- D) Automated scripts

13. What is a functional requirement?

- A) System performance specification
- B) What the system does
- C) How fast the system runs
- D) Security standards

14. A non-functional requirement example is:

- A) User can reset password
- B) System has a login button
- C) Password reset email sent within 5 seconds
- D) Database stores user data

15. Which method measures software size?

- A) Lines of Code (LOC)
- B) Number of developers
- C) Project budget
- D) Meeting frequency

16. Function Points estimate based on:

- A) Only lines of code
- B) Inputs, outputs, inquiries, files, and interfaces
- C) Team size alone
- D) Project duration

17. Verification asks:

- A) Are we building the right product?
- B) Are we building the product right?
- C) Is the product profitable?
- D) Is the product innovative?

18. Validation asks:

- A) Are we building the product right?
- B) Are we following standards?
- C) Are we building the right product?
- D) Are we on budget?

19. Which is a non-functional testing type?

- A) Unit testing
- B) Integration testing
- C) Load/Performance testing

D) Acceptance testing

20. What is scope creep?

- A) Fixed requirements
- B) Unrealistic or changing requirements
- C) Clear project boundaries
- D) Proper planning

21. Automated testing is best for:

- A) One-time exploratory tests
- B) Ad-hoc UI testing
- C) Regression and load testing
- D) Initial user experience evaluation

22. What is a code smell?

- A) Well-written code
- B) Indicator of potential problems in code
- C) Code comments
- D) Version control

23. A “Long Method” code smell means:

- A) A function doing too many things
- B) A well-optimized function
- C) A short, concise function
- D) Properly documented code

24. Input validation helps prevent:

- A) Code optimization
- B) SQL Injection and XSS attacks
- C) User engagement
- D) Database design

25. Static analysis tools are used for:

- A) Running the application
- B) Auto-scanning for vulnerabilities
- C) User interface design
- D) Database management

Section 2: Development Methodologies (Questions 26-45)

26. Scrum has how many core roles?

- A) Two
- B) Three
- C) Four
- D) Five

27. Who is responsible for maximizing product value in Scrum?

- A) Scrum Master
- B) Developer
- C) Product Owner
- D) Tester

28. What does the Scrum Master focus on?

- A) Writing code
- B) Process facilitation
- C) Business value
- D) Testing

29. A Sprint Backlog contains:

- A) All future work
- B) Plan for current sprint
- C) Completed features
- D) Bug reports only

30. The Product Backlog is:

- A) Completed work
- B) List of all work items
- C) Current sprint tasks only
- D) Test cases

31. What is an Increment in Scrum?

- A) Planning document
- B) Finished, potentially shippable work
- C) Meeting agenda
- D) Bug list

32. Agile welcomes:

- A) Fixed requirements
- B) No documentation

- C) Changing requirements
- D) Late testing only

33. Waterfall is characterized by:

- A) Iterative cycles
- B) Sequential phases
- C) Continuous deployment
- D) Flexible requirements

34. DevOps unifies:

- A) Development and Operations
- B) Testing and Design
- C) Planning and Documentation
- D) Frontend and Backend

35. In DevOps, monitoring data feeds back to:

- A) Deployment only
- B) Planning phase
- C) Testing only
- D) Release management

36. Continuous Integration (CI) involves:

- A) Manual deployments
- B) Automated builds and testing
- C) Annual releases
- D) No version control

37. Continuous Deployment (CD) means:

- A) Manual release approval
- B) Automated deployment to production
- C) Quarterly releases
- D) Testing in isolation

38. The Spiral Model emphasizes:

- A) Linear progression
- B) Risk analysis
- C) No planning
- D) Single iteration

39. RAD (Rapid Application Development) focuses on:

- A) Long planning phases

- B) Quick prototyping and iteration
- C) Extensive documentation
- D) Waterfall approach

40. Kanban uses:

- A) Fixed time sprints
- B) Visual workflow boards
- C) No work limits
- D) Annual planning

41. Throwaway prototyping involves:

- A) Building the final system first
- B) Creating a mock version then discarding it
- C) No user feedback
- D) Skipping design phase

42. Scrum ceremonies do NOT include:

- A) Sprint Planning
- B) Daily Standup
- C) Annual Review
- D) Sprint Retrospective

43. Agile values working software over:

- A) Customer collaboration
- B) Comprehensive documentation
- C) Responding to change
- D) Individual interactions

44. The infinity loop in DevOps represents:

- A) Linear process
- B) Continuous cycle
- C) One-time deployment
- D) Documentation phase

45. In modern development, testing is:

- A) Done at the end only
- B) Integrated throughout lifecycle
- C) Optional
- D) Done before coding

Section 3: Testing and Quality (Questions 46-65)

46. Manual testing involves:

- A) Automated scripts
- B) Human testers playing user role
- C) No interaction
- D) Only code review

47. Selenium is used for:

- A) Manual testing
- B) Automated web testing
- C) Database design
- D) Project management

48. User Acceptance Testing (UAT) verifies:

- A) Code syntax
- B) System meets user needs
- C) Database structure
- D) Network speed

49. Regression testing ensures:

- A) New features work only
- B) Fixes didn't break existing functionality
- C) Performance improves
- D) Documentation is complete

50. Load testing checks:

- A) Code quality
- B) System behavior under heavy traffic
- C) User interface design
- D) Database schema

51. Security testing looks for:

- A) Performance issues
- B) Vulnerabilities
- C) User experience problems
- D) Design flaws

52. Mean Time Between Failures (MTBF) measures:

- A) Code quality
- B) System reliability

- C) User satisfaction
- D) Development speed

53. Defect Removal Efficiency is a:

- A) Product metric
- B) Process metric
- C) Design pattern
- D) Programming language

54. Cyclomatic Complexity measures:

- A) Team size
- B) Code maintainability
- C) Project cost
- D) User satisfaction

55. Big O notation is used for:

- A) Project planning
- B) Algorithm efficiency analysis
- C) Team management
- D) Documentation

56. SonarQube is a tool for:

- A) Project management
- B) Static code analysis
- C) Database design
- D) User testing

57. Unit testing verifies:

- A) Entire system
- B) Individual functions/components
- C) User interface only
- D) Network connectivity

58. Integration testing checks:

- A) Individual components
- B) Components working together
- C) User acceptance
- D) Documentation quality

59. Stress testing determines:

- A) Normal operation

- B) System breaking point
- C) User preferences
- D) Code style

60. Penetration testing is related to:

- A) Performance
- B) Security
- C) Usability
- D) Documentation

61. Code coverage measures:

- A) Lines of documentation
- B) Percentage of code tested
- C) Team productivity
- D) Project timeline

62. A test case should be:

- A) Vague and general
- B) Specific and repeatable
- C) Undocumented
- D) Impossible to automate

63. Smoke testing is:

- A) Comprehensive testing
- B) Basic functionality check
- C) Security testing
- D) Performance testing

64. Alpha testing is conducted by:

- A) End users
- B) Internal team
- C) Third-party testers
- D) Customers

65. Beta testing is conducted by:

- A) Developers only
- B) Internal QA team
- C) External users/customers
- D) Management

Section 4: Software Process and Management (Questions 66-85)

66. An SRS document is:

- A) Test plan
- B) Software Requirements Specification
- C) System Release Schedule
- D) Source Code Repository

67. Good requirements should be:

- A) Ambiguous
- B) Unverifiable
- C) Unambiguous and verifiable
- D) Incomplete

68. A Process Model provides:

- A) Final product
- B) Blueprint for how work should be done
- C) User interface
- D) Database schema

69. Change Control Board (CCB) decides:

- A) Code syntax
- B) If maintenance requests are approved
- C) Testing schedules
- D) Developer salaries

70. A Maintenance Request (MR) originates from:

- A) Developers
- B) Customers/Help Desk
- C) Management only
- D) Automated systems

71. Legacy code refers to:

- A) New features
- B) Old code written previously
- C) Documentation
- D) Test cases

72. The DRY principle means:

- A) Document Redundant Yearly
- B) Don't Repeat Yourself

- C) Deploy Regularly Yet
- D) Debug Rigorously Yearly

73. A “God Object” is:

- A) Well-designed class
- B) Large class that knows too much
- C) Optimized code
- D) Test framework

74. Version control systems like Git help with:

- A) Code compilation
- B) Collaboration and code history
- C) User interface design
- D) Database queries

75. CI/CD stands for:

- A) Code Integration/Code Deployment
- B) Continuous Integration/Continuous Deployment
- C) Central Information/Central Data
- D) Code Inspection/Code Documentation

76. A Pull Request is used for:

- A) Database queries
- B) Code review before merging
- C) User authentication
- D) Error handling

77. Release Cycle Time is a:

- A) Product metric
- B) Process metric
- C) Design pattern
- D) Testing method

78. GDPR relates to:

- A) Code quality
- B) Data privacy compliance
- C) Testing frameworks
- D) Design patterns

79. ACM/IEEE codes provide:

- A) Programming syntax

- B) Ethical guidelines for engineers
- C) Testing procedures
- D) Design templates

80. Portability means software can:

- A) Only run on one OS
- B) Run on different environments/OS
- C) Be easily deleted
- D) Have large file size

81. Usability focuses on:

- A) Code efficiency
- B) Ease of use for users
- C) Database design
- D) Network speed

82. Efficiency in software means:

- A) Using maximum resources
- B) Using resources wisely
- C) Slow performance
- D) Large memory footprint

83. Story Points are used for:

- A) Writing documentation
- B) Relative sizing in Agile
- C) Code compilation
- D) Database indexing

84. A realistic schedule is important for:

- A) Project failure
- B) Project success
- C) Scope creep
- D) Poor communication

85. Stakeholder involvement leads to:

- A) Project delays
- B) Increased success rate
- C) Unclear requirements
- D) Communication problems

Section 5: Technical Concepts (Questions 86-100)

86. A Process is:

- A) A thread within a program
- B) Independent program with own memory
- C) A function call
- D) A variable

87. A Thread is:

- A) Independent program
- B) Lighter execution unit within a process
- C) Database connection
- D) Network protocol

88. A Race Condition occurs when:

- A) Code runs too fast
- B) Two threads access shared data simultaneously
- C) Network is slow
- D) Database is full

89. Deadlock happens when:

- A) Code executes successfully
- B) Threads wait on each other forever
- C) System runs fast
- D) Memory is available

90. A Mutex provides:

- A) Unlimited access
- B) Mutual exclusion lock for resources
- C) No synchronization
- D) Multiple simultaneous access

91. A Semaphore:

- A) Blocks all access
- B) Controls access with counter
- C) Has no limit
- D) Is only for processes

92. SQL Injection is prevented by:

- A) Fast queries
- B) Input validation and sanitization

- C) Large databases
- D) Multiple tables

93. XSS (Cross-Site Scripting) is a:

- A) Performance issue
- B) Security vulnerability
- C) Design pattern
- D) Testing method

94. Database indexing improves:

- A) Security only
- B) Query performance
- C) Code readability
- D) User interface

95. Refactoring means:

- A) Adding new features
- B) Cleaning up code without changing behavior
- C) Removing functionality
- D) Rewriting from scratch

96. Technical stakeholders include:

- A) End users only
- B) Admins and security leads
- C) Customers only
- D) Marketing team only

97. Productivity is measured in:

- A) Meetings per day
- B) LOC per person-month
- C) Emails sent
- D) Documentation pages

98. Labor rate is expressed as:

- A) Cost per line of code
- B) Cost per person-month
- C) Cost per feature
- D) Cost per bug

99. Total Effort is calculated by:

- A) Team size × duration

- B) Total LOC ÷ productivity
- C) Cost ÷ team size
- D) Duration × productivity

100. The feedback loop in software process ensures:

- A) No changes needed
 - B) Problems found are fixed before release
 - C) Documentation is skipped
 - D) Testing is avoided
-

Answer Key

1. C		2. B		3. C		4. C		5. C		6. B		7. C		8. B		9. B		10. C
11. B		12. C		13. B		14. C		15. A		16. B		17. B		18. C		19. C		20. B
21. C		22. B		23. A		24. B		25. B		26. B		27. C		28. B		29. B		30. B
31. B		32. C		33. B		34. A		35. B		36. B		37. B		38. B		39. B		40. B
41. B		42. C		43. B		44. B		45. B		46. B		47. B		48. B		49. B		50. B
51. B		52. B		53. B		54. B		55. B		56. B		57. B		58. B		59. B		60. B
61. B		62. B		63. B		64. B		65. C		66. B		67. C		68. B		69. B		70. B
71. B		72. B		73. B		74. B		75. B		76. B		77. B		78. B		79. B		80. B
81. B		82. B		83. B		84. B		85. B		86. B		87. B		88. B		89. B		90. B
91. B		92. B		93. B		94. B		95. B		96. B		97. B		98. B		99. B		100. B