1. Which among the following 4 levels of testing is mapped to Acceptance Testing?
    a. Requirements
    b. Architecture Design
    c. Low Level Design
    d. Code

2. System Testing, Acceptance Testing, Component Testing and. Fill in the blank with the appropriate answer from the following.
    a. Regression Testing
    b. Integration Testing
    c. Unit Testing
    d. Black-box Testing

3. What is the other context type of testing for Static Testing?
    a. Maintenance Testing
    b. Centralized Testing
    c. Integration Testing
    d. Dynamic Testing

4. State whether the following statement is either true or false. “Static testing is done while the Target is executing.”
    a. True
    b. False

5. What is the next level (higher side) of System Testing?
    a. Acceptance Testing
    b. Regression Testing
    c. Component Integration Testing
    d. Unit Testing

6. Which is the most appropriate type of test design technique that suits component testing when the system has complex calculations and decision logic?
    a. State Transition Testing
    b. Decision Testing
    c. Statement Coverage Testing
    d. Equivalence Class Partitioning

7. Scope of maintenance testing is done based on the
    a. Number of system users that got affected by changes
    b. Size and type of system changes
    c. Amount of regression testing performed
    d. Size, risk of the changes and system size

8. When we talk about the analysis performed by executing the program code, we

are talking about ____

a. Force field analysis
b. Dynamic analysis
c. Formal analysis
d. None of the listed options

9. Decision/condition coverage that executes possible combinations of condition outcomes of each decision is called as _____.

a. Black box Testing
b. White box Testing
c. Integration Testing
d. Acceptance Testing

10. Which among the following is the correct sequence to test execution?

a. Identify test cases and test cycles, execute test scripts, set up test environments, and review test cases
b. Set up test environment, identify test case, review test result, and execute test scripts
c. Set up test environments, identify test cases and test cycles, execute test scripts, and review test results
d. All of the above

11. Multiple modules that are logically grouped are tested together for their interfaces with other modules,Which type of testing does this?

a. Acceptance Testing
b. System Testing
c. Integration Testing
d. Unit Testing

12. In Unit Testing, the goal of the statement coverage is to achieve _____

a. Statement coverage of 90%
b. Statement coverage of 100%
c. Statement coverage is not mandatory
d. Anywhere between 0 to 100%

13. When does Test Design begin in SDLC?

a. Testing Phase
b. Low Level Design Phase
c. High Level Design Phase
d. Requirements Phase

14. Which technique is used in test case designing?

a. Boundary Value Analysis
b. Equivalence Class Partitioning
c. Both a and b
d. None of the above

15. Bottom-up Integration Testing has the following advantage(s)
    a. Regression Testing is not required
    b. No stubs need to be written
    c. No drivers need to be written
    d. Major decision points are tested early

16. You track requirements in a test case with the help of the following:
    a. Requirements Document
    b. None of the listed options
    c. Traceability Matrix
    d. Test Plan

17. When should you stop testing?
    a. When you run out of time
    b. When all test cases are done
    c. When quality goals established in the beginning of the projects are met
    d. None of the above

18. Requirements were modified due to a bug during an earlier phase of system testing. What type of testing needs to be followed after this bug is fixed?
    a. Regression Testing
    b. System Testing
    c. Unit Testing
    d. None of the above

19. Instrumentation of the code is required to obtain the behavior of the program of the system under test. This is done during which level of testing?
    a. Integration Testing
    b. System Testing
    c. Unit Testing
    d. None of the above

20. Defect Density is calculated by
    a. Total number of Defects/Effort
    b. Valid Defects/Total number of Defects
    c. Invalid Defects/Valid Defects
    d. Valid Defects/Effort

21. A logic analyzer is a/an _____

a. Software application to analyze digital logic functions
b. Digital voltmeter
c. Device that emulates the microcomputer
d. Analog oscilloscope
e. Multiple channel digital storage scope with many ways to trigger
f. None of the above

22. An Emulator is a _____
    a. Debugging technique used to implement breakpoints
    b. Software application that simulates the hardware and software functions of the microcomputer
    c. Software application used to provide debugging functions
    d. Multiple channel digital storage scope with many ways to trigger
    e. Hardware debugging tool that recreates the input/output signals of the processor chip
    f. None of the above

23. In order to verify the proper functionality of a subroutine, we need to record its input and output parameters. In particular, we write a special main program that provides a known and repeatable sequence of inputs to the subroutine under test. In this way, each time the test sub-routine is changed, we can be sure the change in output values is caused by the software modification and not due to a change in input values. What is this debugging procedure called?
    a. Monitor
    b. Performance Debugging
    c. Non-intrusive Debugging
    d. Stabilization
    e. Emulation
    f. None of the above

24. What is the major difference between Performance Debugging and Functional Debugging?
    a. None of these choices are correct.
    b. Performance Debugging studies the time behavior, and functional debugging tests if the proper output values are produced.
    c. Performance Debugging evaluates the interaction between functions and Functional Debugging measures the accuracy of the system.
    d. Functional Debugging studies the time behavior, and Performance Debugging tests if the proper output values are produced.
    e. Functional Debugging evaluates the interactive between functions, and Performance Debugging measures the accuracy of the system.
    f. They are two names that mean the same thing.

25. Which one of the following options best describes profiling?

a. Profiling is the analysis of the call graph creating a profile of certain functions calling other functions.
b. Profiling involves the dynamic measurements of how fast a subroutine executes.
c. Profiling is the creation of a problem of the computing resources required of the software.
d. Profiling is the analysis of the data flow graph creating a profile of the data values as they are processed.
e. Profiling is the collection of information that involves data on the number of functions that were executed, when they were executed, and what data were they processing.
f. None of these choices are correct.

26. Software maintenance is defined as one of the following activities.
a. Verification of proper operation
b. Modifying the software extending it to solve new applications
c. Adding new features
d. Fixing bugs
e. All of the these activities

27. Embedded Software call graph is used for
a. Dynamic analysis and testing
b. Black box Testing
c. White box Testing
d. Static analysis and testing

28. One of the following terms best describes the sequence of analysis, design, implementation and testing of a product.
a. None of these answers
b. Maintenance
c. Product Development Cycle
d. Flowchart
e. Debugging
f. Data Flow Graph

29. There are a few steps given here for embedded system development. Select the best answer.
i. A compiler generates an object file.
ii. The object file is linked with the library functions using linker.
iii. After re-allocation of the addresses, a locator sends the codes to the device programmer for burning as ROM image in the embedded system ROM.
iv. After re-allocation of addresses, a loader loads the codes to the device programmer for burning as ROM image in the embedded system ROM.
v. After re-allocation of addresses, a loader loads the codes in RAM.

a. i, ii and iv b. i, iii, iv and vi
c. i, ii and iii d. i , ii and vi.

30. Activities during software design cycle are in the sequence of

i. Model/analyze requirements and specifications of system
ii. Design data structure, software architecture, interfaces and algorithms
iii. Test the design
iv. Implementation of design vs component level design
vi. Test all internal logic and external functions of the system
vii. System integration

a. i to vii
b. i, ii, v, iv, vii and vi
c. i, ii, v, iv, vi and vii
d. i, ii, v, iii, iv, vi and vii.

31. Which is the traditional order of embedded software testing that suits mostly the V model life cycle?
Note: I - Integration Testing, U - Unit Testing, S - System Testing, A - Acceptance Testing
a. I, U, S, A
b. A, S, I, U
c. S, A,U ,I
d. I, A, S, U

32. State whether the following statement is either true or false. Embedded Software testing metrics rely on the various test artefacts such as number of test cases, number defects, efforts, etc.
a. True
b. False

33. Test strategy needs to be applied during which of the embedded software testing?
a. Test plan
b. Test case design
c. Test procedures
d. Test execution

34. Stubs and drivers are needed to test the modules for their independent behavior. During what type of testing in an embedded system this is required?
a. Integration testing
b. Unit Testing
c. System Testing
d. Acceptance Testing

35. Top-down integration testing is done with the help of_____.
a. Low level modules
b. High level modules
c. Both a and b
d. None of the above.

36. Bottom-up integration testing is done with the help of _____.

a. Low level modules
b. High level modules
c. Both a and b
d. None of the above

37. Regression testing is done when _____.
    a. there is a change in the system due to new requirements
    b. there is a change in the system due to bug fixes
    c. new modules are added due to change in design
    d. All of the above

38. Business requirements are being tested normally with the help of _____.
    a. Integration Testing
    b. Unit Testing
    c. User Acceptance Testing
    d. System Testing

39. The internal logic and conditions are exercised with the help of the following testing technique.
    a. White box Testing
    b. Grey box Testing
    c. Black box Testing
    d. System Testing

40. Issues inside the implemented code, such as logical errors, can be covered with the help of
    a. Black box Testing
    b. White box Testing
    c. System Testing
    d. All of the above

41. McCabe Cyclomatic complexity metrics determine the
    a. cycles in the embedded software
    b. statements in the embedded software
    c. errors in the embedded software
    d. logic paths that are independently executed in the embedded software.

42. Black-box Testing attempts to find errors in which of the following categories
    a. Incorrect or missing functions
    b. Interface errors
    c. Performance errors
    d. All of the above
    e. None of the above

43. State whether the following statement is either true or false. White box Testing is

applicable only for boundary value analysis.

a. True
b. False

44. Formal technical reviews and code inspection will uncover the errors in the embedded software. This type of mechanism is needed under _____.

a. Dynamic Analysis
b. Static Analysis
c. Integration Testing
d. Unit Testing

45. Which of these are valid software configuration items?

a. Software tools
b. Documentation
c. Executable programs
d. Test data
e. All of the above

46. Primary input for a formal run of the embedded software testing is based on the _____

a. Intermediate versions
b. Final baseline software testing artefacts
c. Customer provided baseline inputs
d. All of the above

47. SCI (Software Configuration Index) is a software engineering practice that suggests that one of the following should maintain the project database or repository.

a. Customer
b. Software Testing Lead
c. Software Team
d. Project Manager

48. State whether the following statement is either true or false. Software Configuration Management is used only for the software development artefacts such as requirements, design and code.

a. True
b. False

49. Software configuration identification applies to

a. Software program database
b. Software program code
c. Test cases, procedure and scripts
d. All of the above

50. When major changes have been made onto one or more configuration objects,

this will result in _____.

a. Control
b. Version
c. Regression
d. Variant

51. The software configuration audit under SCM (Software Configuration Management) is conducted by
    a. The QA Team
    b. Manager
    c. The Test Lead
    d. SW Developers

52. Configuration status reporting is required to
    a. Estimate SW artefacts cost and effort
    b. Generate reports
    c. Control the changes
    d. All of the above

53. Control coupling and data coupling are the activities to measure
    a. Unit Testing
    b. Module and data cohesion
    c. Performance
    d. None of the above

54. State whether the following statement is either true or false. Testing effort can also be estimated using metrics derived from cyclomatic complexity.
    a. True b. False

55. Software testing metrics are used to highlight
    a. Effectiveness and efficiencies during the testing phase
    b. Software life cycle artefacts
    c. Estimation and duration of the project
    d. Number of changes incurred during the testing.

56. Changes in the embedded system necessitates the change in the way the life cycle phases of the embedded software.
    a. True
    b. False
    c. It depends on the kind of change and size of the changes.
    d. None of the above.

57. Agile manifesto applies mostly to
    a. Process over people/team
    b. Individuals over process elements and tools
    c. Following a plan for a change than responding to it
    d. None of the above
58. Scrum project management framework can be applicable to

a. Complete software lifecycle activities
b. Only customer projects
c. Sub-systems that are part of the bigger systems
d. None of the above

59. Embedded software interfaces along with the data objects are used for
a. Unit Testing
b. Acceptance Testing
c. Integration Testing
d. None of the above

60. Control flow and data flow diagram are the techniques used for Static Analysis named as
a. Control Coupling
b. Data Coupling
c. Integration Testing
d. Both Control Coupling and Data Coupling using Static Analysis

61. Control flow diagrams are_____.
a. needed to model event driven systems.
b. required for all systems.
c. used in place of data flow diagrams.
d. useful for modelling real-time systems.
e. both a and d

62. Embedded software metrics are applicable to ?
a. Test cases
b. Test procedures
c. Test execution failure/pass count
d. All of the above

63. Trend chart and Burn down charts are required to
a. Track risks
b. Provide as ‘on date’ status of the on-going activities
c. Pass/failure count
d. All of the above

64. Embedded software testing metrics don't measure
a. Productivity
b. DRE (Defect Removal Efficiency)
c. SV (Schedule Variance)
d. Team Experience

68. LOC (Lines Of Code) is used to measure

a. Executable statements of the code
b. Language independent measure of the program
c. Total number of comments
d. Design computation

66. State whether the following statement is either true or false. DD (Defect Density) and DRE (Defect Removal Efficiency) are quality metrics that are used at embedded software testing project at different phases.
    a. True
    b. False

67. An embedded software project is completely tested only after _____.
    a. All the requirements of the system are tested completely
    b. No more defects found
    c. All the found defects are fixed
    d. All of the above

68. The purpose of Earned Value Analysis is to _____
    a. determine how to compensate developers based on their productivity
    b. provide a quantitative means of assessing software project progress
    c. provide a qualitative means of assessing software project progress
    d. set the price point for a software product based on development effort

69. State whether the following statement is either true or false. SV (Schedule Variance) is a measure of the project schedule whether it's on track or not
    a. True
    b. False

70. Embedded software testing environment is identified during
    a. Embedded software test planning
    b. Embedded software test cases creation
    c. Embedded software procedures development
    d. Embedded software scripts execution.

71. State whether the following statement is either true or false. (EV) Earned Value is a measure of the output produced during the project execution against the planned size/efforts.
    a. True
    b. False

72. Technical inputs for software testing
    a. SRD, SRC, SDD
    b. Code, TC & TP
    c. Scripts, results
    d. All of the above

73. Acceptance Testing is also called as

a. Functional and non-functional Testing
b. Top-down and Bottom up Testing
c. Unit Testing
d. User Level Testing

74. Error is a/an
a. Bug, defect, or a faulty piece of code
b. Mistake that introduces a fault into the software
c. Incorrect result because of a faulty code execution.
d. All of the above

78. Which of the following statements are incorrect?
a. Testing is to avoid customers detecting the defects
b. Testing is used to identify certain bugs that are easier to find
c. Testing is way to understand and present the product and report the product as pass
d. None of the above

76. Software testing is _____.
a. an integral part of Software Development Life Cycle
b. not an integral part of Software Development Life Cycle
c. Explain about hardware components
d. All of the above

77. Among the following, which explains more about system testing environment?
a. End to end system setup is required
b. Integration of sub- modules of the embedded software to evaluate the interaction among them
c. Field testing with actual environment
d. Both a and b

78. The role of testing is _____
a. Verification
b. Validation
c. Both a and b
d. None of the above

79. Which are the following statements are true
a. Black box Testing is based on the external specification of the system
b. White box Testing is based on the internal structure and logic of the system
c. White box Testing can do without knowledge of how the system is constructed
d. Both a and b

80. What is the purpose of a test plan?

a. Control the system
b. Organize the system
c. Follow up the system
d All of the above

81. Test plan covers the aspects of
a. Integration level
b. Unit level
c. Both a and b
d. None of the above

82. Basic building blocks of test specifications are
a. Test scripts
b. Test cases
c. Test requirements
d. Test reports

83. Which of the following option is not under the test case design?
a. Analyze requirements
b. Functional and non-functional segregation
c. Requirement categorization

84. Testing is a
a. Process of executing a program with the intent of finding errors
b. Process of executing program lines in parallel
c. Process of executing program operands
d. Process of executing op codes

88. What are the minimum specifications required to design test case
a. Unique name, id , actions, expected results
b. Unique id, actions, prerequisite, expected results
c. Description, prerequisites
d. Both a and c

86. _____is done to show that the unit does not satisfy the functional specification and/or its implemented structure does not match the intended design structure.
a. Unit Testing
b. Integration Testing
c. Acceptance Testing
d. None of the above

87. _____is done to show that even though components were individually

satisfactory, the combination is incorrect or inconsistent.

a. Unit Testing
b. Integration Testing
c. Acceptance Testing
d. None of the above

88. Acceptance Testing aims at uncovering _____

a. Implied requirements
b. Revealing bugs
c. The combination is incorrect
d. All of the above

89. Test harness is used for

a. Running groups of existing automated test scripts.
b. Running groups of non-existing test scripts.
c. Both a and b
d. All of the above

90. State whether the following statement is either true or false. Host is used to test hardware independent codes.

a. True b. False

91. Target is used to test the following

a. Hardware independent codes
b. Hardware dependent codes
c. Both a and b
d. None of the above

92. One of the disadvantages of a Simulator is

a. Timing and speed issues can't be resolved completely as the calculation of processor speed and at host may not adequately map
b. Hardware dependent testing can't be done
c. Portability issues
d. All of the above

93. Which of the following provides great flexibility and ease for developing various applications on a single system in place of testing that multiple targeted systems

a. Simulator
b. Debugger
c. Emulator
d. IDE

94. Which of the following defines what is needed in the test environment to make it possible to perform the planned activities?

a. Infrastructure
b. Code
c. Both a and b
d. None of the above

95. In the lifecycle model, the principal test activities are divided into

a. 8 phases
b. 4 phases
c. 6 phases
d. 3 phases

96. Which of the following are the Entry and Exit criteria considerations?
i. Dependent and must have essentials
ii. Expected deliverables
iii. Transition criteria
iv. Participants

a. i only
b. ii and iii
c. i and iv
d. All of the above

97. When the V-model at the system level is combined with the multiple V-models at the component level, then it is called _____
a. Nested multiple V-model
b. Nested Z-model
c. Both
d. None of the above

98. Developers start testing at
a. Unit level
b. Acceptance level
c. Both a and b
d. None of the above

99. Independent test teams test_____
a. At the beginning of development life cycle
b. At the end of development lifecycle
c. In the middle of development life cycle
d. None of the above

100. Which of the following is NOT true?
a. Early detected defects are easy to correct. In general, the cost of fixing defects will rise in time
b. Defects detected during post development stages are easy to trace back to source
c. Good testing during the development stage has a positive influence on the total project time.
d. Straight testing of exception handling is only possible at unit level, where exceptions can be triggered individually