1. We split testing into distinct stages primarily because:

a) Each test stage has a different purpose
b) It is easier to manage testing in stages
c) We can run different tests in different environments
d) The more stages we have, the better the testing

2. Which of the following is likely to benefit most from the use of test tools providing test capture and replay facilities?

a) Regression testing
b) Integration testing
c) System testing
d) User acceptance testing

3. Which of the following statements is NOT correct?

a) A minimal test set that achieves 100% LCSAJ coverage will also achieve 100% branch coverage
b) A minimal test set that achieves 100% path coverage will also achieve 100% statement coverage
c) A minimal test set that achieves 100% path coverage will generally detect more faults than one that achieves 100% statement coverage
d) A minimal test set that achieves 100% statement coverage will generally detect more faults than one that achieves 100% branch coverage

4. Which of the following requirements is testable?

a) The system shall be user friendly
b) The safety-critical parts of the system shall contain 0 faults
c) The response time shall be less than one second for the specified design load
d) The system shall be built to be portable

5. Analyse the following highly simplified procedure:

Ask: "What type of ticket do you require, single or return?"
IF the customer wants «return»
Ask: "What rate, Standard or Cheap-day?"
IF the customer replies «Cheap-day»
Say: "That will be £11:20"
ELSE
Say: "That will be £19:50"
ENDIF
ELSE
Say: "That will be £9:75"
ENDIF

Now decide the minimum number of tests that are needed to ensure that all the questions have been asked, all combinations have occurred and all replies given.

a) 3
b) 4
c) 5
d) 6

6. Error guessing:

a) supplements formal test design techniques
b) can only be used in component, integration and system testing
c) is only performed in user acceptance testing
d) is not repeatable and should not be used

7. Which of the following is NOT true of test coverage criteria?

a) Test coverage criteria can be measured in terms of items exercised by a test suite
b) A measure of test coverage criteria is the percentage of user requirements covered
c) A measure of test coverage criteria is the percentage of faults found
d) Test coverage criteria are often used when specifying test completion criteria

8. In prioritising what to test, the most important objective is to:

a) find as many faults as possible
b) test high risk areas
c) obtain good test coverage
d) test whatever is easiest to test

9. Given the following sets of test management terms (v-z), and activity descriptions (1-5), which one of the following best pairs the two sets?

v – test control
w – test monitoring
x - test estimation
y - incident management
z - configuration control

1 - calculation of required test resources
2 - maintenance of record of test results
3 - re-allocation of resources when tests overrun
4 - report on deviation from test plan
5 - tracking of anomalous test results

a) v-3, w-2, x-1, y-5, z-4
b) v-2, w-5, x-1, y-4, z-3
c) v-3, w-4, x-1, y-5, z-2
d) v-2, w-1, x-4, y-3, z-5

10. Which one of the following statements about system testing is NOT true?

a) System tests are often performed by independent teams
b) Functional testing is used more than structural testing
c) Faults found during system tests can be very expensive to fix
d) End-users should be involved in system tests

11. Which of the following is false?

a) Incidents should always be fixed.
b) An incident occurs when expected and actual results differ
c) Incidents can be analysed to assist in test process improvement
d) An incident can be raised against documentation

12. Enough testing has been performed when:

a) time runs out
b) the required level of confidence has been achieved
c) no more faults are found
d) the users won't find any serious faults

13. Which of the following is NOT true of incidents?

a) Incident resolution is the responsibility of the author of the software under test
b) Incidents may be raised against user requirements
c) Incidents require investigation and/or correction
d) Incidents are raised when expected and actual results differ

14. Which of the following is not described in a unit test standard?

a) syntax testing
b) equivalence partitioning
c) stress testing
d) modified condition/decision coverage

15. Which of the following is false?

a) In a system two different failures may have different severities
b) A system is necessarily more reliable after debugging for the removal of a fault
c) A fault need not affect the reliability of a system
d) Undetected errors may lead to faults and eventually to incorrect behaviour

16. Which one of the following statements, about capture-replay tools, is NOT correct?

a) They are used to support multi-user testing
b) They are used to capture and animate user requirements
c) They are the most frequently purchased types of CAST tool
d) They capture aspects of user behaviour

17. How would you estimate the amount of re-testing likely to be required?

a) Metrics from previous similar projects
b) Discussions with the development team
c) Time allocated for regression testing
d) A & B

18. Which of the following is true of the V-model?

a) It states that modules are tested against user requirements
b) It only models the testing phase
c) It specifies the test techniques to be used
d) It includes the verification of designs

19. The oracle assumption:

a) is that there is some existing system against which test output may be checked
b) is that the tester can routinely identify the correct outcome of a test
c) is that the tester knows everything about the software under test
d) is that the tests are reviewed by experienced testers

20. Which of the following characterises the cost of faults?

a) They are cheapest to find in the early development phases and the most expensive to fix in the latest test phases
b) They are easiest to find during system testing but the most expensive to fix then
c) Faults are cheapest to find in the early development phases but the most expensive to fix then
d) Although faults are most expensive to find during early development phases, they are cheapest to fix then

21. Which of the following should NOT normally be an objective for a test?

a) To find faults in the software
b) To assess whether the software is ready for release
c) To demonstrate that the software doesn't work
d) To prove that the software is correct

22. Which of the following is a form of functional testing?

a) Boundary value analysis
b) Usability testing
c) Performance testing
d) Security testing

23. Which of the following would NOT normally form part of a test plan?

a) Features to be tested
b) Incident reports
c) Risks
d) Schedule

24. Which of these activities provides the biggest potential cost saving from the use of CAST?

a) Test management
b) Test design
c) Test execution
d) Test planning

25. Which of the following is NOT a white box technique?

a) Statement testing
b) Path testing
c) Data flow testing
d) State transition testing

26. Data flow analysis studies:

a) possible communications bottlenecks in a program
b) the rate of change of data values as a program executes
c) the use of data on paths through the code
d) the intrinsic complexity of the code

27. In a system designed to work out the tax to be paid: An employee has £4000 of salary tax free. The next £1500 is taxed at 10%. The next £28000 is taxed at 22%. Any further amount is taxed at 40%. To the nearest whole pound, which of these is a valid Boundary Value Analysis test case?

a) £1500
b) £32001
c) £33501
d) £28000

28. An important benefit of code inspections is that they:

a) enable the code to be tested before the execution environment is ready
b) can be performed by the person who wrote the code
c) can be performed by inexperienced staff
d) are cheap to perform

29. Which of the following is the best source of Expected Outcomes for User Acceptance Test scripts?

a) Actual results
b) Program specification
c) User requirements
d) System specification

30. What is the main difference between a walkthrough and an inspection?

a) An inspection is lead by the author, whilst a walkthrough is lead by a trained moderator
b) An inspection has a trained leader, whilst a walkthrough has no leader
c) Authors are not present during inspections, whilst they are during walkthroughs
d) A walkthrough is lead by the author, whilst an inspection is lead by a trained moderator

31. Which one of the following describes the major benefit of verification early in the life cycle?

a) It allows the identification of changes in user requirements
b) It facilitates timely set up of the test environment
c) It reduces defect multiplication
d) It allows testers to become involved early in the project

32. Integration testing in the small:

a) tests the individual components that have been developed
b) tests interactions between modules or subsystems
c) only uses components that form part of the live system
d) tests interfaces to other systems

33. Static analysis is best described as:

a) the analysis of batch programs
b) the reviewing of test plans
c) the analysis of program code
d) the use of black box testing

34. Alpha testing is:

a) post-release testing by end user representatives at the developer's site
b) the first testing that is performed
c) pre-release testing by end user representatives at the developer's site
d) pre-release testing by end user representatives at their sites

35. A failure is:

a) found in the software; the result of an error
b) departure from specified behaviour
c) an incorrect step, process or data definition in a computer program
d) a human action that produces an incorrect result

36. In a system designed to work out the tax to be paid: An employee has £4000 of salary tax free. The next £1500 is taxed at 10%. The next £28000 is taxed at 22%. Any further amount is taxed at 40%. Which of these groups of numbers would fall into the same equivalence class?

a) £4800; £14000; £28000
b) £5200; £5500; £28000
c) £28001; £32000; £35000
d) £5800; £28000; £32000

37. The most important thing about early test design is that it:

a) makes test preparation easier
b) means inspections are not required
c) can prevent fault multiplication
d) will find all faults

38. Which of the following statements about reviews is true?

a) Reviews cannot be performed on user requirements specifications
b) Reviews are the least effective way of testing code
c) Reviews are unlikely to find faults in test plans
d) Reviews should be performed on specifications, code, and test plans

39. Test cases are designed during:

a) test recording
b) test planning
c) test configuration
d) test specification

40. A configuration management system would NOT normally provide:

a) linkage of customer requirements to version numbers
b) facilities to compare test results with expected results
c) the precise differences in versions of software component source code
d) restricted access to the source code library

1. When what is visible to end-users is a deviation from the specific or expected behavior, this is called:

a) an error
b) a fault
c) a failure
d) a defect
e) a mistake

2. Regression testing should be performed:

v) every week
w) after the software has changed
x) as often as possible
y) when the environment has changed
z) when the project manager says

a) v & w are true, x – z are false
b) w, x & y are true, v & z are false
c) w & y are true, v, x & z are false
d) w is true, v, x y and z are false
e) all of the above are true

3. IEEE 829 test plan documentation standard contains all of the following except:

a) test items
b) test deliverables
c) test tasks
d) test environment
e) test specification

4. Testing should be stopped when:

a) all the planned tests have been run
b) time has run out
c) all faults have been fixed correctly
d) both a) and c)
e) it depends on the risks for the system being tested

5. Order numbers on a stock control system can range between 10000 and 99999 inclusive. Which of the following inputs might be a result of designing tests for only valid equivalence classes and valid boundaries:

a) 1000, 5000, 99999
b) 9999, 50000, 100000
c) 10000, 50000, 9999
d) 10000, 99999
e) 9999, 10000, 50000, 99999, 10000

6. Consider the following statements about early test design:

i. early test design can prevent fault multiplication
ii. faults found during early test design are more expensive to fix
iii. early test design can find faults
iv. early test design can cause changes to the requirements
v. early test design takes more effort

a) i, iii & iv are true. ii & v are false
b) iii is true, i, ii, iv & v are false
c) iii & iv are true. i, ii & v are false
d) i, iii, iv & v are true, ii us false
e) i & iii are true, ii, iv & v are false

7. Non-functional system testing includes:

a) testing to see where the system does not function properly
b) testing quality attributes of the system including performance and usability
c) testing a system feature using only the software required for that action
d) testing a system feature using only the software required for that function
e) testing for functions that should not exist

8. Which of the following is NOT part of configuration management:

a) status accounting of configuration items
b) auditing conformance to ISO9001
c) identification of test versions
d) record of changes to documentation over time
e) controlled library access

9. Which of the following is the main purpose of the integration strategy for integration testing in the small?

a) to ensure that all of the small modules are tested adequately
b) to ensure that the system interfaces to other systems and networks
c) to specify which modules to combine when and how many at once
d) to ensure that the integration testing can be performed by a small team
e) to specify how the software should be divided into modules

10. What is the purpose of test completion criteria in a test plan:

a) to know when a specific test has finished its execution
b) to ensure that the test case specification is complete
c) to set the criteria used in generating test inputs
d) to know when test planning is complete
e) to plan when to stop testing

11. Consider the following statements

i. an incident may be closed without being fixed
ii. incidents may not be raised against documentation
iii. the final stage of incident tracking is fixing
iv. the incident record does not include information on test environments
v. incidents should be raised when someone other than the author of the software performs the test

a) ii and v are true, i, iii and iv are false
b) i and v are true, ii, iii and iv are false
c) i, iv and v are true, ii and iii are false
d) i and ii are true, iii, iv and v are false
e) i is true, ii, iii, iv and v are false

12. Given the following code, which is true about the minimum number of test cases required for full statement and branch coverage:

```
Read P
Read Q
IF P+Q > 100 THEN
Print "Large"
ENDIF
If P > 50 THEN
Print "P Large"
ENDIF
```

a) 1 test for statement coverage, 3 for branch coverage
b) 1 test for statement coverage, 2 for branch coverage
c) 1 test for statement coverage, 1 for branch coverage
d) 2 tests for statement coverage, 3 for branch coverage
e) 2 tests for statement coverage, 2 for branch coverage

13. Given the following:

```
Switch PC on
Start "outlook"
IF outlook appears THEN
Send an email
Close outlook
```

a) 1 test for statement coverage, 1 for branch coverage
b) 1 test for statement coverage, 2 for branch coverage
c) 1 test for statement coverage. 3 for branch coverage
d) 2 tests for statement coverage, 2 for branch coverage
e) 2 tests for statement coverage, 3 for branch coverage

14. Given the following code, which is true:

```
IF A > B THEN
C = A – B
ELSE
C = A + B
ENDIF
Read D
IF C = D Then
Print "Error"
ENDIF
```

a) 1 test for statement coverage, 3 for branch coverage
b) 2 tests for statement coverage, 2 for branch coverage
c) 2 tests for statement coverage. 3 for branch coverage
d) 3 tests for statement coverage, 3 for branch coverage
e) 3 tests for statement coverage, 2 for branch coverage

15. Consider the following:

Pick up and read the newspaper
Look at what is on television
If there is a program that you are interested in watching then switch the television on and watch the program
Otherwise
Continue reading the newspaper
If there is a crossword in the newspaper then try and complete the crossword

a) SC = 1 and DC = 1
b) SC = 1 and DC = 2
c) SC = 1 and DC = 3
d) SC = 2 and DC = 2
e) SC = 2 and DC = 3

16. The place to start if you want a (new) test tool is:

a) Attend a tool exhibition
b) Invite a vendor to give a demo
c) Analyse your needs and requirements
d) Find out what your budget would be for the tool
e) Search the internet

17. When a new testing tool is purchased, it should be used first by:

a) A small team to establish the best way to use the tool
b) Everyone who may eventually have some use for the tool
c) The independent testing team
d) The managers to see what projects it should be used in
e) The vendor contractor to write the initial scripts

18. What can static analysis NOT find?

a) The use of a variable before it has been defined
b) Unreachable ("dead") code
c) Whether the value stored in a variable is correct
d) The re-definition of a variable before it has been used
e) Array bound violations

19. Which of the following is NOT a black box technique:

a) Equivalence partitioning
b) State transition testing
c) LCSAJ
d) Syntax testing
e) Boundary value analysis

20. Beta testing is:

a) Performed by customers at their own site
b) Performed by customers at their software developer's site
c) Performed by an independent test team
d) Useful to test bespoke software
e) Performed as early as possible in the lifecycle

21. Given the following types of tool, which tools would typically be used by developers and which by an independent test team:

i. static analysis
ii. performance testing
iii. test management
iv. dynamic analysis
v. test running
vi. test data preparation

a) developers would typically use i, iv and vi; test team ii, iii and v
b) developers would typically use i and iv; test team ii, iii, v and vi
c) developers would typically use i, ii, iii and iv; test team v and vi
d) developers would typically use ii, iv and vi; test team I, ii and v
e) developers would typically use i, iii, iv and v; test team ii and vi

22. The main focus of acceptance testing is:

a) finding faults in the system
b) ensuring that the system is acceptable to all users
c) testing the system with other systems
d) testing for a business perspective
e) testing by an independent test team

23. Which of the following statements about the component testing standard is false:

a) black box design techniques all have an associated measurement technique
b) white box design techniques all have an associated measurement technique
c) cyclomatic complexity is not a test measurement technique
d) black box measurement techniques all have an associated test design technique
e) white box measurement techniques all have an associated test design technique

24. Which of the following statements is NOT true:

a) inspection is the most formal review process
b) inspections should be led by a trained leader
c) managers can perform inspections on management documents
d) inspection is appropriate even when there are no written documents
e) inspection compares documents with predecessor (source) documents

25. A typical commercial test execution tool would be able to perform all of the following EXCEPT:

a) generating expected outputs
b) replaying inputs according to a programmed script
c) comparison of expected outcomes with actual outcomes
d) recording test inputs
e) reading test values from a data file

26. The difference between re-testing and regression testing is

a) re-testing is running a test again; regression testing looks for unexpected side effects
b) re-testing looks for unexpected side effects; regression testing is repeating those tests
c) re-testing is done after faults are fixed; regression testing is done earlier
d) re-testing uses different environments, regression testing uses the same environment
e) re-testing is done by developers, regression testing is done by independent testers

27. Expected results are:

a) only important in system testing
b) only used in component testing
c) never specified in advance
d) most useful when specified in advance
e) derived from the code

28. Test managers should not:

a) report on deviations from the project plan
b) sign the system off for release
c) re-allocate resource to meet original plans
d) raise incidents on faults that they have found
e) provide information for risk analysis and quality improvement

29. Unreachable code would best be found using:

a) code reviews
b) code inspections
c) a coverage tool
d) a test management tool
e) a static analysis tool

30. A tool that supports traceability, recording of incidents or scheduling of tests is called:

a) a dynamic analysis tool
b) a test execution tool
c) a debugging tool
d) a test management tool
e) a configuration management tool

31. What information need not be included in a test incident report:

a) how to fix the fault
b) how to reproduce the fault
c) test environment details
d) severity, priority
e) the actual and expected outcomes

32. Which expression best matches the following characteristics or review processes:

1. led by author
2. undocumented
3. no management participation
4. led by a trained moderator or leader
5. uses entry exit criteria

s) inspection
t) peer review
u) informal review
v) walkthrough

a) s = 4, t = 3, u = 2 and 5, v = 1
b) s = 4 and 5, t = 3, u = 2, v = 1
c) s = 1 and 5, t = 3, u = 2, v = 4
d) s = 5, t = 4, u = 3, v = 1 and 2
e) s = 4 and 5, t = 1, u = 2, v = 3

33. Which of the following is NOT part of system testing:

a) business process-based testing
b) performance, load and stress testing
c) requirements-based testing
d) usability testing
e) top-down integration testing

34. What statement about expected outcomes is FALSE:

a) expected outcomes are defined by the software's behaviour
b) expected outcomes are derived from a specification, not from the code
c) expected outcomes include outputs to a screen and changes to files and databases
d) expected outcomes should be predicted before a test is run
e) expected outcomes may include timing constraints such as response times

35. The standard that gives definitions of testing terms is:

a) ISO/IEC 12207
b) BS7925-1
c) BS7925-2
d) ANSI/IEEE 829
e) ANSI/IEEE 729

36. The cost of fixing a fault:

a) Is not important
b) Increases as we move the product towards live use
c) Decreases as we move the product towards live use
d) Is more expensive if found in requirements than functional design
e) Can never be determined

37. Which of the following is NOT included in the Test Plan document of the Test Documentation Standard:

a) Test items (i.e. software versions)
b) What is not to be tested
c) Test environments
d) Quality plans
e) Schedules and deadlines

38. Could reviews or inspections be considered part of testing:

a) No, because they apply to development documentation
b) No, because they are normally applied before testing
c) No, because they do not apply to the test documentation
d) Yes, because both help detect faults and improve quality
e) Yes, because testing includes all non-constructive activities

39. Which of the following is not part of performance testing:

a) Measuring response time
b) Measuring transaction rates
c) Recovery testing
d) Simulating many users
e) Generating many transactions

40. Error guessing is best used

a) As the first approach to deriving test cases
b) After more formal techniques have been applied
c) By inexperienced testers
d) After the system has gone live
e) Only by end users

1. What is failure?

a) Deviation from expected result to actual result
b) Defect in the software
c) Error in the program code
d) Fault in the system

2. People who don't participate in technical reviews

a) Analysts
b) Management
c) Developers
d) Testers

3. What type of testing is done to supplement the rigorous testing?

a) Regression testing
b) Integration testing
c) Error Guessing
d) System testing

4. Capture and replay facilities are least likely to be used to ….

a) Performance testing
b) Recovery testing
c) GUI testing
d) User requirements

5. What is the smallest number of test cases required to Provide 100% branch coverage?

```
If(x>y)
x=x+1;
else y=y+1;
while(x>y) { y=x*y; x=x+1; }
```

a) 1
b) 2
c) 3
d) 4

6. Cyclomatic complexity is used to calculate:

a) number of independent paths in the basis set of a program
b) number of binary decisions + 1
c) upper bound for the number of tests that must be conducted to ensure that all statements have been executed at least once
d) number of branches and decisions

7. If a candidate is given an exam of 40 questions, should get 25 marks to pass (61%) and should get 80% for distinction, what is equivalence class?

a) 23, 24, 25
b) 0, 12, 25
c) 30, 36, 39
d) 32, 37, 40

8. Match the following:

1. Test estimation
2. Test control
3. Test monitoring

A. measures of tracking process
b) effort required to perform activities
c) reallocation of resources

a) 1-B, 2-C, 3-A
b) 1-B, 2-A, 3-C
c) 1-C, 2-A, 3-B
d) 1-A, 2-B, 3-C

9. One of the following is not a part of white box testing as per BS7925-II standards.

a) Random testing
b) Data Flow testing
c) Statement testing
d) Syntax testing

10. Exclusive use of white box testing in a test-phase will:

a) Ensure the test item is adequately tested
b) Make the need for black-box testing redundant
c) Run the risk that the requirements are not satisfied
d) Suffices for the unit testing phase

11. Match the following.

1. Configuration identification
2. Configuration control
3. Status reporting
4. Configuration auditing

A. Maintains of CI's in a library
b) Checks on the contents of the library
c) Function recording and tracking problems.
c) Requires the all CI's and their versions in the system are known
a) 1-D, 2-C, 3-D, 4-A
b) 1-D, 2-A, 3-C, 4-B
c) 1-A, 2-B, 3-D, 4-C
d) 1-C, 2-B, 3-A, 4-D

12. Cost of the reviews will not include.

a) Review process itself
b) Metrics analysis
c) Tool support
d) Process improvement

13. What type of testing will you perform on internet banking solution?

a) System integration
b) Functional testing
c) Non-functional testing.
d) Requirements testing

14. Which tool will be used to test the flag memory leaks and unassigned pointers?

a) Dynamic analysis tool
b) Static Analysis tool
c) Maintenance tool
d) Configuration tool

15. Which of the following is not included in Test Plan?

a) Features to be tested
b) Environmental needs
c) Suspension criteria
d) Expected results

16. A piece of software has been given....what tests in the following will you perform?

1) Test the areas most critical to business processes
2) Test the areas where faults will be maximum
3) Test the easiest functionalities

a) 1 & 2 are true and 3 is false
b) 1, 2 & 3 are true
c) 1 is true, 2 & 3 are false
d) 1 & 2 are false, 3 is true

17. Amount of testing performed will not depend on

a) Risks involved
b) Contractual requirements
c) Legal requirements
d) Test data

18. Which of the following provides the biggest potential cost saving from use of CAST?

a) Test management
b) Test design
c) Test planning
d) Test execution

19. Testing is not done to ….

a) Find faults
b) Improve quality
c) Check user friendliness.
d) Improve software accuracy

20. Software quality is not relevant to …

a) Correctness
b) Usability
c) Viability
d) Reusability

21. Which of the following are false?

a) Incidents should always be investigated and resolved
b) Incidents occur when expected and actual results differ
c) Incidents can be analyzed to assist in test process improvement
d) An incident can be raised against documentation

22. Which of the following is a type of non-functional testing?

a) Usability testing
b) Statement Coverage
c) Dataflow testing
d) Cause-effect graphing

23. To make a test effective it is most important that:

a) It is easy to execute
b) It is designed to detect faults if present
c) The expected outcome is specified before execution
d) It is unlikely to delay progress

24. Error guessing is:

a) An appropriate way of deriving system tests
b) Only used if good requirements are not available
c) Only used when good requirements are available
d) The most appropriate way of deriving system tests

25. A standard for software testing terminology is:

a) IEEE 802.11
b) ISO 9001
c) BS 7925-1
d) BS 7925-2

26. Which of the following is true of V-model?

a) It includes the verification of designs
b) It states that modules are tested against user requirements
c) It specifies the test techniques to be used
d) It only models the testing phase

27. Which of the following is NOT part of a high level test plan?

a) Functions not to be tested
b) Environmental requirements
c) Analysis of Specifications
d) Entry and Exit criteria

28. When do you stop testing?

a) When the specified number of faults are found
b) When the test completion criteria are met
c) When all high and medium priority tests are complete
d) When all statements have been executed

29. Which of the following is least important in test management?

a) Estimating test duration
b) Incident Management
c) Configuration Management
d) De-bugging

30. How would you estimate the amount of re-testing likely to be required?

a) Metrics from previous similar projects
b) Discussions with the development team
c) Time allocated for regression testing
d) Both a & b

31. Which of the following statements is true of static analysis?

a) Compiling code is not a form of static analysis
b) Static analysis need not be performed before imperative code is executed
c) Static analysis can find faults that are hard to find with dynamic testing
d) Extensive statistic analysis will not be needed if white- Box testing is to be performed

32. Regression testing always involves

a) Testing whether a known software fault been fixed
b) Executing a large number of different tests
c) Testing whether modifications have introduced adverse side effects
d) Using a test automation tool

33. A field failure occurs when multiple users access a system. Which of the following is true?

a) This is an acceptable risk of a multi-user system
b) Insufficient functional testing has been performed
c) This indicates an important non-functional requirement was not specified and tested
d) It is not possible to test against such events prior to release

34. Integration testing in the large involves:

a) Testing the system when combined with other systems
b) Testing a sub-system using stubs and drivers
c) Testing a system with a large number of users
d) Combing software components and testing them in one go

35. Data flow analysis studies:

a) How rapidly data is transferred through a program
b) The rate of change of data values as a program executes
c) The use of data on paths through the code
d) The intrinsic complexity of the code

36. The oracle assumption is that:

a) There is some existing system against which test output may be checked
b) The tester knows everything about the software under test
c) The tester can routinely identify the correct outcome of a test
d) Tools are used to check the results of testing

The following text will be used in 37 and 38.

In a system designed to work out the tax to be paid: An employee has $4000 of salary tax free. The next $1500 is taxed at 10% The next $28000 is taxed at 22%. Any further amount is taxed at 40%.

37. To the nearest $ which of these is a valid Boundary Value Analysis test case?

a) $1500
b) $32001
c) $28000
d) $33501

38. Which of these groups of numbers would fall into the same equivalence class?

a) $5800; $28000; $32000
b) $0; $200; $4200
c) $5200; $5500; $28000
d) $28001; $32000; $35000

39. Which of the following is NOT a characteristic of User Acceptance Testing?

a) Use of automated test execution tools
b) Testing performed by users
c) Testing against acceptance test criteria
d) Integration of system with user documentation

40. For software to be reliable it must:

a) Be easy to maintain
b) Be unlikely to cause a failure
c) Never fail under any circumstances
d) Be written according to coding standards

1. Which of the following is a major task of test planning?

a) Determining the test approach
b) Preparing test specifications
c) Evaluating exit criteria and reporting
d) Measuring and analyzing results

2. Which of the following statements is MOST OFTEN true?

a) Source-code inspections are often used in component testing
b) Component testing searches for defects in programs that are separately testable
c) Component testing is an important part of user acceptance testing
d) Component testing aims to expose problems in the interactions between software and hardware components

3. In a system designed to work out the tax to be paid:

An employee has £4000 of salary tax free. The next £1500 is taxed at 10%. The next £28000 after that is taxed at 22%. Any further amount is taxed at 40%.

To the nearest whole pound, which of these groups of numbers fall into three DIFFERENT equivalence classes?

a) £4000; £5000; £5500
b) £32001; £34000; £36500
c) £28000; £28001; £32001
d) £4000; £4200; £5600

4. Which of the following will NOT be detected by static analysis?

a) Parameter type mismatches
b) Errors in requirements
c) Undeclared variables
d) Uncalled functions

5. Which of the following test activities can be automated?

i Reviews and inspections
ii Metrics gathering
iii Test planning
iv Test execution
v Data generation

a) i, iii, iv
b) i, ii, iii
c) ii, iv, v
d) ii, iii, v

6. Which of the following is an objective of a pilot project for the introduction of a testing tool?

a) Evaluate testers' competence to use the tool
b) Complete the testing of a key project
c) Assess whether the benefits will be achieved at reasonable cost
d) Discover what the requirements for the tool are

7. What is the MAIN purpose of a Master Test Plan?

a) To communicate how incidents will be managed
b) To communicate how testing will be performed
c) To produce a test schedule
d) To produce a work breakdown structure

8. In a REACTIVE approach to testing when would you expect the bulk of the test design work to begin?

a) After the software or system has been produced
b) During development
c) As early as possible
d) During requirements analysis

9. What is the objective of debugging?

i To localise a defect
ii To fix a defect
iii To show value
iv To increase the range of testing

a) i, iii. B
b) ii, iii, iv
c) ii, iv
d) i, ii

10. Given the following decision table:

	Rule 1	Rule 2	Rule 3	Rule 4
Conditions				
UK resident?	False	True	True	True
Age between 18 - 55?	Don't care	False	True	True
Smoker?	Don't care	Don't care	False	True
Actions				
Insure client?	False	False	True	True
Offer 10% discount?	False	False	True	False

What is the expected result for each of the following test cases?

A.TC1: Fred is a 32 year old smoker resident in London
b)TC3: Jean-Michel is a 65 year non-smoker resident in Paris A

a) A – Insure, 10% discount, B – Insure, no discount
b) A – Don't insure, B – Don't insure
c) A – Insure, no discount, B – Don't insure
d) A – Insure, no discount, B – Insure with 10% discount

11. Which of the following are valid objectives for testing?

i. To find defects
ii. To gain confidence in the level of quality
iii. To identify the cause of defects
iv. To prevent defects

a) i, ii, and iii
b) ii, iii and iv
c) i, ii and iv
d) i, iii and iv

12. The process of designing test cases consists of the following activities:

i. Elaborate and describe test cases in detail by using test design techniques
ii. Specify the order of test case execution
iii. Analyse requirements and specifications to determine test conditions
iv. Specify expected results

According to the process of identifying and designing tests, what is the correct order of these activities?

a) iii, i, iv, ii
b) iii, iv, i, ii
c) iii, ii, i, iv
d) ii, iii, i, iv

13. What is the main purpose of impact analysis for testers?

a) To determine the programming effort needed to make the changes
b) To determine what proportion of the changes need to be tested
c) To determine how much the planned changes will affect users
d) To determine how the existing system may be affected by changes

14. Which of the following requirements would be tested by a functional system test?

a)The system must be able to perform its functions for an average of 23 hours 50 mins per day
b) The system must perform adequately for up to 30 users
c) The system must allow a user to amend the address of a customer
d) The system must allow 12,000 new customers per year

15. In a system designed to work out the tax to be paid:

An employee has £4000 of salary tax free. The next £1500 is taxed at 10%. The next £28000 after that is taxed at 22%. Any further amount is taxed at 40%.

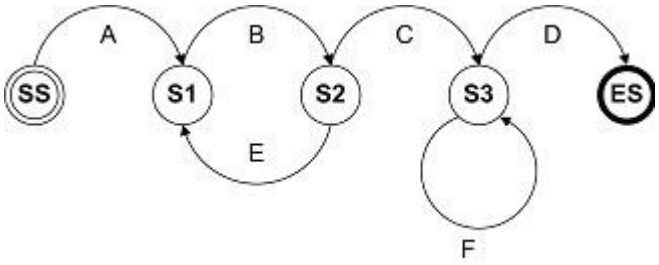
To the nearest whole pound, which of these is a valid Boundary Value Analysis test case?

a) £28000
b) £33501
c) £32001
d) £1500

16. Which of the following defines the sequence in which tests should be executed?

a) Test plan
b) Test procedure specification
c) Test case specification
d) Test design specification

17. Given the following state transition diagram:



Which of the following series of state transitions below will provide 0-switch coverage?

a) A, B, E, B, C, F, D
b) A, B, E, B, C, F, F
c) A, B, E, B, C, D
d) A, B, C, F, F, D

18. Given the following decision table:

	Rule 1	Rule 2	Rule 3	Rule 4
Conditions				
Frequent Flyer Member	Yes	Yes	No	No
Class	Business	Economy	Business	Economy
Actions				
Offer upgrade to First	Yes	No	No	No
Offer upgrade to Business	N/A	Yes	N/A	No

What is the expected result for each of the following test cases?

A. Frequent flyer member, travelling in Business class
b) Non-member, travelling in Economy class

a) A – Don't offer any upgrade, B – Don't offer any upgrade
b) A – Don't offer any upgrade, B – Offer upgrade to Business class
c) A – Offer upgrade to First, B – Don't offer any upgrade
d) A – Offer upgrade to First, B – Offer upgrade to Business class

19. During which fundamental test process activity do we determine if MORE tests are needed?

a) Test implementation and execution
b) Evaluating test exit criteria
c) Test analysis and design
d) Test planning and control

20. What is the difference between a project risk and a product risk?

a) Project risks are potential failure areas in the software or system; product risks are risks that surround the project's capability to deliver its objectives
b) Project risks are the risks that surround the project's capability to deliver its objectives; product risks are potential failure areas in the software or system
c) Project risks are typically related to supplier issues, organizational factors and technical issues; product risks are typically related to skill and staff shortages
d) Project risks are risks that delivered software will not work; product risks are typically related to supplier issues, organizational factors and technical issues

21. Given the following specification, which of the following values for age are in the SAME equivalence partition?

If you are less than 18, you are too young to be insured. Between 18 and 30 inclusive, you will receive a 20% discount. Anyone over 30 is not eligible for a discount.

a) 17, 18, 19
b) 29, 30, 31
c) 18, 29, 30
d) 17, 29, 31

22. Considering the following pseudo-code, calculate the MINIMUM number of test cases for statement coverage, and the MINIMUM number of test cases for decision coverage respectively.

```
READ A
READ B
READ C
IF C>A THEN
IF C>B THEN
PRINT «C must be smaller than at least one number»
ELSE
PRINT «Proceed to next stage»
ENDIF
ELSE
PRINT «B can be smaller than C»
ENDIF
```

a) 3, 3
b) 2, 3
c) 2, 4
d) 3, 2

23. Which of the following is a benefit of independent testing?

a) Code cannot be released into production until independent testing is complete
b) Testing is isolated from development
c) Developers do not have to take as much responsibility for quality
d) Independent testers see other and different defects, and are unbiased

24. Which of the following tools is most likely to contain a comparator?

a) Dynamic Analysis tool
b) Test Execution tool
c) Static Analysis tool
d) Security tool

25. Given the following State Table:

	A	B	C	D	E	F
SS	S1					
S1		S2				
S2			S3		S1	
S3				ES		S3
ES						

Which of the following represents an INVALID state transition?

a) E from State S2
b) E from State S3
c) B from State S1
d) F from State S3

26. Which of the following is a characteristic of good testing in any life cycle model?

a) All document reviews involve the development team
b) Some, but not all, development activities have corresponding test activities
c) Each test level has test objectives specific to that level
d) Analysis and design of tests begins as soon as development is complete

27. Which activity in the fundamental test process includes evaluation of the testability of the requirements and system?

a) Test analysis and design
b) Test planning and control
c) Test closure
d) Test implementation and execution

28. The following statements are used to describe the basis for creating test cases using either black or white box techniques:

i information about how the software is constructed
ii models of the system, software or components
iii analysis of the test basis documentation
iv analysis of the internal structure of the components

Which combination of the statements describes the basis for black box techniques?

a) ii and ii
b) ii and iv
c) i and iv
d) i and iii

29. What is typically the MOST important reason to use risk to drive testing efforts?

a) Because testing everything is not feasible
b) Because risk-based testing is the most efficient approach to finding bugs
c) Because risk-based testing is the most effective way to show value
d) Because software is inherently risky

30. Which of the following defines the scope of maintenance testing?

a) The coverage of the current regression pack
b) The size and risk of any change(s) to the system
c) The time since the last change was made to the system
d) Defects found at the last regression test run

31. Which is the MOST important advantage of independence in testing?

a) An independent tester may find defects more quickly than the person who wrote the software
b) An independent tester may be more focused on showing how the software works than the person who wrote the software
c) An independent tester may be more effective and efficient because they are less familiar with the software than the person who wrote it
d) An independent tester may be more effective at finding defects missed by the person who wrote the software

32. For testing, which of the options below best represents the main concerns of Configuration Management?

i. All items of testware are identified and version controlled;
ii. All items of testware are used in the final acceptance test;
iii. All items of testware are stored in a common repository;
iv. All items of testware are tracked for change;
v. All items of testware are assigned to a responsible owner;
vi. All items of testware are related to each other and to development items;

a) i, iv, vi
b) ii, iii, v
c) i, iii, iv
d) iv, v, vi

33. Which of the following would be a valid measure of test progress?

a) Number of undetected defects
b) Total number of defects in the product
c) Number of test cases not yet executed
d) Effort required to fix all defects

34. Which of following statements is true? Select ALL correct options.

Regression testing should be performed:

i once a month
ii when a defect has been fixed
iii when the test environment has changed
iv when the software has changed

a) ii and iv
b) ii, iii and iv
c) i, ii and iii
d) i and iii

35. In which of the following orders would the phases of a formal review usually occur?

a) Planning, preparation, kick off, meeting, rework, follow up
b) Kick off, planning, preparation, meeting, rework, follow up
c) Preparation, planning, kick off, meeting, rework, follow up
d) Planning, kick off, preparation, meeting, rework, follow up

36. Which of the following are valid objectives for incident reports?

i. Provide developers and other parties with feedback about the problem to enable identification, isolation and correction as necessary
ii. Provide ideas for test process improvement
iii. Provide a vehicle for assessing tester competence
iv. Provide testers with a means of tracking the quality of the system under test

a) i, ii, iii
b) i, ii, iv
c) i, iii, iv
d) ii, iii, iv

37. Consider the following techniques. Which are static and which are dynamic techniques?

i. Equivalence Partitioning
ii. Use Case Testing
iii. Data Flow Analysis
iv. Exploratory Testing
v. Decision Testing
vi. Inspections

a) i-iv are static, v-vi are dynamic
b) iii and vi are static, i, ii, iv and v are dynamic
c) ii, iii and vi are static, i, iv and v are dynamic
d) vi is static, i-v are dynamic

38. Why are static testing and dynamic testing described as complementary?

a) Because they share the aim of identifying defects and find the same types of defect
b) Because they have different aims and differ in the types of defect they find
c) Because they have different aims but find the same types of defect
d) Because they share the aim of identifying defects but differ in the types of defect they find

39. Which of the following are disadvantages of capturing tests by recording the actions of a manual tester?

i The script may be unstable when unexpected events occur
ii Data for a number of similar tests is automatically stored separately from the script
iii Expected results must be added to the captured script
iv The captured script documents the exact inputs entered by the tester
v When replaying a captured test, the tester may need to debug the script if it doesn't play correctly

a) i, iii, iv, v
b) ii, iv and v
c) i, ii and iv
d) i and v

40. Which of the following is determined by the level of product risk identified?

a) Extent of testing
b) Scope for the use of test automation
c) Size of the test team
d) Requirement for regression testing

1. Deciding how much testing is enough should take into account:

i. Level of Risk including Technical and Business product and project risk
ii. Project constraints such as time and budget
iii. Size of Testing Team
iv. Size of the Development Team

a) i, ii, iii are true and iv is false
b) i,,iv are true and ii is false
c) i, ii are true and iii, iv are false
d) ii, iii, iv are true and i is false

2. Test planning has which of the following major tasks?

i. Determining the scope and risks, and identifying the objectives of testing.
ii. Determining the test approach (techniques, test items, coverage, identifying and interfacing the teams involved in testing, testware)
iii. Reviewing the Test Basis (such as requirements, architecture, design, interface)
iv. Determining the exit criteria.

a) i, ii, iv are true and iii is false
b) i, iv are true and ii is false
c) i, ii are true and iii, iv are false
d) ii, iii, iv are true and i is false

3. Evaluating testability of the requirements and system are a part of which phase:

a) Test Analysis and Design
b) Test Planning and control
c) Test Implementation and execution
d) Evaluating exit criteria and reporting

4. One of the fields on a form contains a text box which accepts alphabets in lower or upper case. Identify the invalid Equivalance class value.

a. CLASS
b. cLASS
c. CLass
d. CLa01ss

5. In a system designed to work out the tax to be paid:

An employee has £4000 of salary tax free. The next £1500 is taxed at 10% The next £28000 is taxed at 22% Any further amount is taxed at 40% Which of these groups of numbers would fall into the same equivalence class?

a) £4800; £14000; £28000
b) £5200; £5500; £28000
c) £28001; £32000; £35000
d) £5800; £28000; £32000

6. Which of the following has highest level of independence in which test cases are:

a) Designed by persons who write the software under test
b) Designed by a person from a different section
c) Designed by a person from a different organization
d) Designed by another person

7. We use the output of the requirement analysis, the requirement specification as the input for writing:

a) User Acceptance Test Cases
b) Integration Level Test Cases
c) Unit Level Test Cases
d) Program specifications

8. Validation involves which of the following:

i. Helps to check the Quality of the Built Product
ii. Helps to check that we have built the right product.
iii. Helps in developing the product
iv. Monitoring tool wastage and obsoleteness.

a) Options i, ii, iii, iv are true.
b) ii is true and i, iii, iv are false
c) i, ii, iii are true and iv is false
d) iii is true and i, ii, iv are false

9. Which of the following uses Impact Analysis most?

a) Component testing
b) Non-functional system testing
c) User acceptance testing
d) Maintenance testing

10. What is the expected result for each of the following test cases?

	Rule 1	Rule 2	Rule 3	Rule 4
Conditions				
Citibank Card Member	Yes	Yes	No	No
Type of Room	Silver	Platinum	Silver	Platinum
Actions				
Offer upgrade to Gold Luxury	Yes	No	No	No
Offer upgrade to Silver	N/A	Yes	N/A	No

A. Citibank card member, holding a Silver room
b) Non Citibank-member, holding a Platinum room

a) A – Don't offer any upgrade, B – Don't offer any upgrade
b) A – Don't offer any upgrade, B – Offer upgrade to Gold
c) A – Offer upgrade to Silver, B – Offer upgrade to Silver
d) A – Offer upgrade to Gold, B – Don't offer any upgrade

11. Repeated Testing of an already tested program, after modification, to discover any defects introduced or uncovered as a result of the changes in the software being tested or in another related or unrelated software component:

a) Re Testing
b) Confirmation Testing
c) Regression Testing
d) Negative Testing

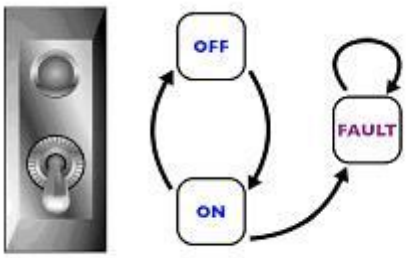
12. Impact Analysis helps to decide:

a) How much regression testing should be done
b) Exit Criteria
c) How many more test cases need to written
d) Different Tools to perform Regression Testing

13. Functional system testing is:

a) testing that the system functions with other systems
b) testing that the components that comprise the system function together
c) testing the end to end functionality of the system as a whole
d) testing the system performs functions within specified response times

14. Consider the above state transition diagram of a switch. Which of the following represents an invalid state transition?



a) OFF to ON
b) ON to OFF
c) FAULT to ON

15. Peer Reviews are also called as:

a) Inspection
b) Walkthrough
c) Technical Review
d) Formal Review

16. Consider the following statements:

i. 100% statement coverage guarantees 100% branch coverage.
ii. 100% branch coverage guarantees 100% statement coverage.
iii. 100% branch coverage guarantees 100% decision coverage.
iv. 100% decision coverage guarantees 100% branch coverage.
v. 100% statement coverage guarantees 100% decision coverage.

a) ii is True; i, iii, iv & v are False
b) i & v are True; ii, iii & iv are False
c) ii & iii are True; i, iv & v are False
d) ii, iii & iv are True; i & v are False

17. The Kick Off phase of a formal review includes the following :-

a) Explaining the objective
b) Fixing defects found typically done by author
c) Follow up
d) Individual Meeting preparations

18. Match every stage of the software Development Life cycle with the Testing Life cycle:

i. Hi-level design a Unit tests
ii. Code b Acceptance tests
iii. Low-level design c System tests
iv. Business requirements d Integration tests

a) i-d , ii-a , iii-c , iv-b
b) i-c , ii-d , iii-a , iv-b
c) i-b , ii-a , iii-d , iv-c
d) i-c , ii-a , iii-d , iv-b

19. Which of the following is not phase of the Fundamental Test Process?

a) Test Planning and Control
b) Test implementation and Execution
c) Requirement Analysis
d) Evaluating Exit criteria and reporting

20. Which of the following techniques is NOT a black box technique?

a) State transition testing
b) LCSAJ (Linear Code Sequence and Jump)
c) syntax testing
d) boundary value analysis

21. Success Factors for a review include :

i. Each Review does not have a predefined objective
ii. Defects found are welcomed and expressed objectively
iii. Management supports a good review process.
iv. There is an emphasis on learning and process improvement.

a) ii, iii, iv are correct and i is incorrect
b) iii, i, iv is correct and ii is incorrect
c) i, iii, iv, ii is in correct
d) ii is correct

22. Defects discovered by static analysis tools include:

i. Variables that are never used.
ii. Security vulnerabilities.
iii. Programming Standard Violations
iv. Uncalled functions and procedures

a) i, ii, iii, iv is correct
b) iii is correct, and i, ii, iv are incorrect
c) i, ii, iii and iv are incorrect
d) iv, ii is correct

23. Test Conditions are derived from :-

a) Specifications
b) Test Cases
c) Test Data
d) Test Design

24. Which of the following is true about White and Black Box Testing Technique:-

a) Equivalance partitioning, Decision Table and Control flow are White box Testing Techniques
b) Equivalence partitioning, Boundary Value Analysis, Data Flow are Black Box Testing Techniques
c) Equivalence partitioning, State Transition, Use Case Testing are black box Testing Techniques
d) Equivalence Partioning, State Transition, Use Case Testing and Decision Table are White Box Testing Techniques

25. Regression testing should be performed:

i. every week
ii. after the software has changed
iii. as often as possible
iv. when the environment has changed
v. when the project manager says

a) i & ii are true, iii, iv & v are false
b) ii, iii & iv are true, i & v are false
c) ii & iv are true, i, iii & v are false
d) ii is true, i, iii, iv & v are false

26. Benefits of Independent Testing:

a) Independent testers are much more qualified than Developers
b) Independent testers see other and different defects and are unbiased
c) Independent Testers cannot identify defects.
d) Independent Testers can test better than developers

27. Minimum Tests Required for Statement Coverage and Branch Coverage:

Read P
Read Q
If P+Q > 100 then
Print "Large"
End if
If P > 50 then
Print "pLarge"
End if

a) Statement coverage is 2, Branch Coverage is 2
b) Statement coverage is 3 and branch coverage is 2
c) Statement coverage is 1 and branch coverage is 2
d) Statement Coverage is 4 and Branch coverage is 2

28. Minimum Test Required for Statement Coverage:

```
Disc = 0
Order-qty = 0
Read Order-qty
If Order-qty >=20 then
Disc = 0.05
If Order-qty >=100 then
Disc =0.1
End if
End if
```

a) Statement coverage is 4
b) Statement coverage is 1
c) Statement coverage is 3
d) Statement Coverage is 2

29. The structure of an incident report is covered in the Standard for Software Test Documentation IEEE 829 and is called as:

a) Anomaly Report
b) Defect Report
c) Test Defect Report
d) Test Incident Report

30. Which of the following is the task of a Test Lead / Leader?

i. Interaction with the Test Tool Vendor to identify best ways to leverage test tool on the project
ii. Write Test Summary Reports based on the information gathered during testing
iii. Decide what should be automated, to what degree and how
iv. Create the Test Specifications

a) i, ii, iii is true and iv is false
b) ii, iii, iv is true and i is false
c) i is true and ii,iii,iv are false
d) iii and iv is correct and i and ii are incorrect

31. Features of White Box Testing Technique:

i. We use explicit knowledge of the internal workings of the item being tested to select the test data
ii. Uses specific knowledge of programming code to examine outputs and assumes that the tester knows the path of logic in a unit or a program
iii. Checking for the performance of the application
iv. Also checks for functionality

a) i, ii are true and iii and iv are false
b) iii is true and i, ii, iv are false
c) ii, iii is true and i, iv is false
d) iii and iv are true and i, ii are false

32. Which of the following is a part of Test Closure Activities?

i. Checking which planned deliverables have been delivered
ii. Defect report analysis
iii. Finalizing and archiving testware
iv. Analyzing lessons

a) i, ii, iv are true and iii is false
b) i, ii, iii are true and iv is false
c) i, iii, iv are true and ii is false
d) All of above are true

33. Which of the following will be the best definition for Testing?

a) The goal / purpose of testing is to demonstrate that the program works
b) The purpose of testing is to demonstrate that the program is defect free
c) The purpose of testing is to demonstrate that the program does what it is supposed to do
d) Testing is executing Software for the purpose of finding defects

34. Which of the following is not a type of incremental testing approach?

a) Top down
b) Big-bang
c) Bottom up
d) Functional incrementation

35. Drivers are also known as:

i. Spade
ii. Test harness
iii. Scaffolding

a) i, ii are true and iii is false
b) i, iii are true and ii is false
c) ii, iii are true and i is false
d) All of the above are true

36. Exit Criteria may consist of:

i. Thoroughness measures , such as coverage of code, functionality or risk
ii. Estimates of Defect density or reliability measures
iii. Residual risk such as defects not fixed or lack of test coverage in certain areas
iv. Verifying the Test Environment

a) iv is correct and i, ii, iii are incorrect
b) i, ii, iii is correct and iv is incorrect
c) ii is correct and i, ii, iii are incorrect
d) iii and iv are correct and i, ii are incorrect

37. Which of the following helps in monitoring the Test Progress:-

i. Percentage of Test Case Execution
ii. Percentage of work done in test environment preparation
iii. Defect Information e.g. defect density, defects found and fixed
iv. The size of the testing Team and skills of the engineers

a) iv is correct and i, ii, iii are incorrect
b) i, ii, iii are correct and iv is incorrect
c) i, ii are correct and iii, iv are incorrect
d) i, iv are correct and ii , iii are incorrect

38. The selection of a test approach should consider the context:

i. Risk of Failure of the Project, hazards to the product and risks of product failure to humans
ii. Skills and experience of the people in the proposed technique, tools and methods
iii. The objective of the testing endeavor and the mission of the testing team.
iv. The size of the testing Team

a) i, ii, iii, iv are true
b) i, ii, iii are true and iv is false
c) ii, iii, iv are true and i is false
d) i, iv are true and ii, iii are false

39. In case of Large Systems:

a) Only few tests should be run
b) Testing should be on the basis of Risk
c) Only Good Test Cases should be executed.
d) Test Cases written by good test engineers should be executed.

40. The Provision and Management of a controlled library containing all the configurations items is called as:

a) Configuration Control
b) Status Accounting
c) Configuration Identification
d) Configuration Identification

1. Which document contains a set of test cases?

a) Test Specification
b) Test Plan
c) Test Report
d) Testers CV

2. Where are the results of a testing phase stored?

a) Test Specification
b) Test Plan
c) Test Record
d) Test Case

3. What is used to check that sufficient testing has been performed?

a) Test Completion Criteria
b) Test Deletion Criteria
c) The Test Plan
d) The Test Specification

4. What is a successful Test?

a) A successful test is one that finds no bugs
b) A successful test is one that finds a fault
c) A successful test is one that creates no results
d) A successful test is one that finds a failure

5. A Developer's perspective of a Tester is often?

a) Seen as an unnecessary part of the product development
b) Seen as constructive to the product development
c) Seen as destructive to the product development
d) Seen as a creative part of the product development

6. The purpose of a Developer is often?

a) Seen as an unnecessary part of the product development
b) Seen as constructive to the product development
c) Seen as a creative part of the product development
d) Seen as destructive to the product development

7. Which one of the following attributes is commonly associated with a Tester?

a) Seen as being creative
b) No industry standard qualifications
c) Poor communicators
d) Skills in a very specific area

8. Which one of the following attributes is commonly associated with a Tester?

a) Skills in a very specific area
b) Multi-talented
c) Highly valued within the company
d) Poor communicators

9. Which one of the following attributes is commonly associated with a Developer?

a) Very good communicators
b) Seen as being destructive
c) Rarely valued within a company
d) Highly valued within the company

10. Which one of the following attributes is commonly associated with a Developer?

a) Skills in a very specific area
b) Seen as being destructive
c) Rarely valued within a company
d) Multi-talented

11. Where can friction most commonly be found?

a) Between Testers
b) Between Testers and Developers
c) Between Testers and Customers
d) Between Testers and Salesmen

12. Which of the following has the highest independence?

a) Test cases are not chosen by a person
b) Test cases are designed by a person(s) from a different organization
c) Test cases are designed by another person(s)
d) Test cases are designed by the person(s) writing the software

13. Which of the following has the highest independence?

a) Test cases are designed by the person(s) writing the software
b) Test cases are designed by a person(s) from a different section
c) Test cases are designed by another person(s)
d) Test cases are designed by a person(s) from a different organization

14. Which of the following has the lowest independence?

a) Test cases are designed by the person(s) writing the software
b) Test cases are designed by another person(s)
c) Test cases are designed by a person(s) from a different section
d) Test cases are designed by the person(s) writing the software

15. Which of the following has the lowest independence?

a) Test cases are designed by another person(s)
b) Test cases are designed by a person(s) from a different section
c) Test cases are not chosen by a person
d) Test cases are designed by a person(s) from a different organization

16. "Whenever a fault is detected and fixed then the software should be _____ to ensure that the original fault has been successfully removed."

a) Automated
b) Regression tested
c) Re-tested
d) Returned to the Developer

17. «_____ attempts to verify that modifications have not caused unintended adverse side effects in the unchanged software (regression faults) and that the modified system still meets its requirements.»

a) Automated testing
b) Regression testing
c) Re-testing
d) Acceptance testing

18. Often, expected results are based on.....?

a) Based on an educated guess
b) Future results
c) What the Developer tells the Tester
d) Previous results

19. Where is a good place to look for information, when creating expected results for a new test case?

a) The product sales brochure
b) The Test Team Leader
c) Under the table
d) Design documentation

20. Which of the following is not a prioritisation criteria?

a) Probability of a failure
b) Testers requirement
c) Customer requirement
d) Cost of testing

21. Which of the following is not a prioritisation criteria?

a) Feature history
b) Severity of possible failure
c) Probability of a failure
d) Probability of success

22. What does SDLC represent?

a) Software Developing Life Cycle
b) Systems Development Life Cycle
c) Systems Developing Life Cycle
d) Software Development Life Cycle

23. Which of the following is a valid model for SDLC?

a) V & C
b) RAD
c) ATSL 160669
d) ROD

24. What does V & V represent?

a) Verifying & Verification
b) Validation & Verifying
c) Validity & Verification d) Verification & Validation

25. What is termed "confirmation by examination and provision of objective evidence that specified requirements have been fulfilled"?

a) Regression
b) Validation
c) Verification
d) Reviewing

26. What is termed "confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use have been fulfilled"?

a) Reviewing
b) Verification
c) Regression
d) Validation

27. In simple terms "_____: Are we building the product right?"

a) Reviewing
b) Verification
c) Validation
d) Regression

28. In simple terms "_____: Are we building the right product?"

a) Validation
b) Regression
c) Verification
d) Reviewing

29. Which model is also known as the Sequential Model?

a) V-model
b) Waterfall Model
c) Spiral Model
d) RAD

30. Which model commonly results in Test creation & planning not being considered until the code has been written?

a) RAD
b) The Spiral Model
c) The Waterfall Model
d) The V-model

31. Which model clearly displays the relationship between Developing and Testing?

a) Waterfall model
b) V-model
c) RAD
d) Spiral model

32. Which model has an incremental approach to both Developing and Testing?

a) V-model
b) RAD
c) Waterfall model
d) Spiral model

33. Which is the suggested model to use when not all of the requirements are known to the users?

a) Waterfall model
b) V-model
c) Spiral model
d) RAD

34. What does «RAD» represent?

a) Rapid Application Development
b) Rapid Application Deployment
c) Rapid Application Deploying
d) Rapid Application Developing

35. What does «DDSM» represent?

a) Dynamic Systems Developers Methodology
b) Dynamic Systems Database Methodology
c) Dynamic Software Development Methodology
d) Dynamic Systems Development Methodology

36. What is designed to organise and control RAD developments?

a) SMDD
b) MSDD
c) DSDM
d) DDSM

37. Which model has little or no formal documentation?

a) RAD
b) V-model
c) Waterfall
d) Spiral

38. "The earlier on in the development lifecycle the fault is found, the _____ it is to rectify"

a) Cheaper
b) More Expensive
c) Easier
d) More difficult

39. Which of the following is worse?

a) A fault found by a Tester
b) A fault found during a beta test
c) A fault found just before the products release
d) A fault found by a customer

40. The cost of a fault is dependant on _____ it is found?

a) How
b) Where
c) When
d) By whom

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1. Deliverables of test design phase include all the following except:

a) Test data
b) Test data plan
c) Test summary report
d) Test procedure plan

2. Which of the following is not decided in the test-planning phase?

a) Schedules and deliverables
b) Hardware and software
c) Entry and exit criteria
d) Types of test cases

3. Typical defects that are easier to find in reviews than in dynamic testing are:

a) deviations from standards
b) requirement defects
c) design defects
d) insufficient maintainability and incorrect interface specifications
e) All of the above

4. Load Testing Tools

a) reduces the time spent by the testers
b) reduces the resources spent (hardware)
c) mostly used in web testing
d) all of the above

5. Reviews, static analysis and dynamic testing have the same objective

A. identifying defects
b) fixing defects
c) 1 and 2
c) None

6. Defect arrival rate curve:

A. Shows the number of newly discovered defects per unit time
b) Shows the number of open defects per unit time.
c) Shows the cumulative total number of defects found up to this time.
c) Any of these, depending on the company.

7. What are the 2 major components taken into consideration with risk analysis?

a) The probability the negative event will occur
b) The potential loss or impact associated with the event
c) Both A and B
d) Neither A nor B

8. We can achieve complete statement coverage but still miss bugs because:

a) The failure occurs only if you reach a statement taking the TRUE branch of an IF statement, and you got to the statement with a test that passed through the FALSE branch
b) The failure depends on the program's inability to handle specific data values, rather than on the program's flow of control
c) Both A and B
d) We are not required to test code that customers are unlikely to execute

9. Who is responsible for conducting test readiness review?

a) Test manager
b) Test engineer
c) both A & B
d) Project Manager

10. What if the project isn't big enough to justify extensive testing?

a) Use risk based analysis to find out which areas need to be tested
b) Use automation tool for testing
c) A and B
d) None of the above

11. What are the key features to be concentrated upon when doing a testing for world wide web sites

a) Interaction between html pages
b) Performance on the client side
c) Security aspects
d) All of the above

12. What can be done if requirements are changing continuously?

a) Work with the project's stakeholders early on to understand how requirements might change so that alternate test plans and strategies can be worked out in advance, if possible.
b) Negotiate to allow only easily-implemented new requirements into the project, while moving more difficult new requirements into future versions of the application
c) Both A and B
d) None of the above

13. The selection of test cases for regression testing

a) Requires knowledge on the bug fixes and how it affect the system
b) Includes the area of frequent defects
c) Includes the area which has undergone many/recent code changes
d) All of the above

14. Measurement dysfunction is a problem because:

a) Even though the numbers you look at appear better, to achieve these numbers, people are doing other aspects of their work much less well
b) We don't know how to measure a variable (our measurement is dysfunctional) and so we don't know how to interpret the result
c) You are measuring the wrong thing and thus reaching the wrong conclusions
d) All of the above

15. What do you mean by "Having to say NO"

a) No, the problem is not with testers
b) No, the software is not ready for production
c) Both A and B
d) none of the above

16. According to the lecture, there are several risks of managing your project's schedule with a statistical reliability model. These include:

A. Testers spend more energy early in the product trying to find bugs than preparing to do the rest of the project's work more efficiently
b) Managers might not realize that the testing effort is ineffective, late in the project, because they expect a low rate of bug finding, so the low rate achieved doesn't alarm them.
c) It can increase the end-of-project pressure on testers to not find bugs, or to not report bugs.
c) All of the above

17. Operations testing is:

a) compliance testing
b) disaster testing
c) verifying compliance to rules
d) functional testing
e) ease of operations

18. Tools like change Man, Clear case are used as

a) functional automation tools
b) performance testing tools
c) configuration management tools
d) none of the above.

19. Important consequences of the impossibility of complete testing are

a) We can never be certain that the program is bug free
b) We have no definite stopping point for testing, which makes it easier for some managers to argue for very little testing
c) We have no easy answer for what testing tasks should always be required, because every task takes time that could be spent on other high importance tasks
d) All of the above

20. Which is not in sequence in 11 Step Software Testing process

a) Assess development plan and status
b) Develop the test plan
c) Test software design
d) Test software requirement

21. In the MASPAR case study:

a) Security failures were the result of untested parts of code
b) The development team achieved complete statement and branch coverage but missed a serious bug in the MASPAR operating system
c) An error in the code was so obscure that you had to test the function with almost every input value to find its two special-case failures
d) All of the above

22. Complete statement and branch coverage means:

a) That you have tested every statement in the program
b) That you have tested every statement and every branch in the program
c) That you have tested every IF statement in the program
d) That you have tested every combination of values of IF statements in the program

23. What if the project isn't big enough to justify extensive testing

a) Use risk based analysis to find out which areas need to be tested
b) Use automation tool for testing
c) A and B
d) None of the above

24. Security falls under

a) compliance testing
b) disaster testing
c) verifying compliance to rules
d) functional testing
e) ease of operations

25. Which is the best definition of complete testing:

a) You have discovered every bug in the program
b) You have tested every statement, branch, and combination of branches in the program
c) You have completed every test in the test plan
d) You have reached the scheduled ship date

26. What is the concept of introducing a small change to the program and having the effects of that change show up in some test?

a) Desk checking
b) Debugging a program
c) A mutation error
d) Performance testing
e) Introducing mutations

1. COTS is known as

a) Commercial off the shelf software
b) Compliance of the software
c) Change control of the software
c) Capable off the shelf software

2. From the below given choices, which one is the «Confidence testing»

a) Sanity testing
b) System testing
c) Smoke testing
c) Regression testing

3. «Defect Density» calculated in terms of

a) The number of defects identified in a component or system divided by the size of the component or the system
b) The number of defects found by a test phase divided by the number found by that test phase and any other means after wards
c) The number of defects identified in the component or system divided by the number of defects found by a test phase
c) The number of defects found by a test phase divided by the number found by the size of the system

4. «Be bugging» is known as

a) Preventing the defects by inspection
b) Fixing the defects by debugging
c) Adding known defects by seeding
c) A process of fixing the defects by tester

5. An expert based test estimation is also known as

a) Narrow band Delphi
b) Wide band Delphi
c) Bespoke Delphi
c) Robust Delphi

6. When testing a grade calculation system, a tester determines that all scores from 90 to 100 will yield a grade of A, but scores below 90 will not. This analysis is known as:

a) Equivalence partitioning
b) Boundary value analysis
c) Decision table
c) Hybrid analysis

7. All of the following might be done during unit testing except

a) Desk check
b) Manual support testing
c) Walkthrough
c) Compiler based testing

8. Which of the following characteristics is primarily associated with software reusability?

a) The extent to which the software can be used in other applications
b) The extent to which the software can be used by many different users
c) The capability of the software to be moved to a different platform
c) The capability of one system to be coupled with another system

9. Which of the following software change management activities is most vital to assessing the impact of proposed software modifications?

a) Baseline identification
b) Configuration auditing
c) Change control
c) Version control

10. Which of the following statements is true about a software verification and validation program?

I. It strives to ensure that quality is built into software.
II. It provides management with insights into the state of a software project.
III. It ensures that alpha, beta, and system tests are performed.
IV. It is executed in parallel with software development activities.

a) I, II & III
b) II, III & IV
c) I, II & IV
c) I, III & IV

11. Which of the following is a requirement of an effective software environment?

I. Ease of use
II. Capacity for incremental implementation
III. Capability of evolving with the needs of a project
IV. Inclusion of advanced tools

a) I, II & III
b) I, II & IV
c) II, III & IV
c) I, III & IV

12. A test manager wants to use the resources available for the automated testing of a web application. The best choice is

a) Test automater, web specialist, DBA, test lead
b) Tester, test automater, web specialist, DBA
c) Tester, test lead, test automater, DBA
c) Tester, web specialist, test lead, test automater

13. A project manager has been transferred to a major software development project that is in the implementation phase. The highest priority for this project manager should be to

a) Establish a relationship with the customer
b) Learn the project objectives and the existing project plan
c) Modify the project' s organizational structure to meet the manager' s management style
c) Ensure that the project proceeds at its current pace

14. Change X requires a higher level of authority than Change Y in which of the following pairs? Change X Change Y

a) Code in development Code in production
b) Specifications during requirements analysis Specifications during systems test
c) Documents requested by the technical development group Documents requested by customers
c) A product distributed to several sites A product with a single user

15. Which of the following functions is typically supported by a software quality information system?

I. Record keeping
II. System design
III. Evaluation scheduling
IV. Error reporting

a) I, II&III
b) II, III & IV
c) I, III & IV
c) I, II & IV

16. During the testing of a module tester «X» finds a bug and assigned it to developer. But developer rejects the same, saying that it's not a bug. What «X» should do?

a) Report the issue to the test manager and try to settle with the developer.
b) Retest the module and confirm the bug
c) Assign the same bug to another developer
c) Send to the detailed information of the bug encountered and check the reproducibility

17. The primary goal of comparing a user manual with the actual behavior of the running program during system testing is to

a) Find bugs in the program
b) Check the technical accuracy of the document
c) Ensure the ease of use of the document
c) Ensure that the program is the latest version

18. A type of integration testing in which software elements, hardware elements, or both are combined all at once into a component or an overall system, rather than in stages.

a) System Testing
b) Big-Bang Testing
c) Integration Testing
c) Unit Testing

19. In practice, which Life Cycle model may have more, fewer or different levels of development and testing, depending on the project and the software product. For example, there may be component integration testing after component testing, and system integration testing after system testing.

a) Water Fall Model
b) V-Model
c) Spiral Model
c) RAD Model

20. Which technique can be used to achieve input and output coverage? It can be applied to human input, input via interfaces to a system, or interface parameters in integration testing.

a) Error Guessing
b) Boundary Value Analysis
c) Decision Table testing
c) Equivalence partitioning

21. There is one application, which runs on a single terminal. There is another application that works on multiple terminals. What are the test techniques you will use on the second application that you would not do on the first application?

a) Integrity, Response time
b) Concurrency test, Scalability
c) Update & Rollback, Response time
c) Concurrency test, Integrity

22. You are the test manager and you are about the start the system testing. The developer team says that due to change in requirements they will be able to deliver the system to you for testing 5 working days after the due date. You cannot change the resources (work hours, test tools, etc.) What steps you will take to be able to finish the testing in time.

a) Tell to the development team to deliver the system in time so that testing activity will be finish in time.
b) Extend the testing plan, so that you can accommodate the slip going to occur
c) Rank the functionality as per risk and concentrate more on critical functionality testing
c) Add more resources so that the slippage should be avoided

23. Item transmittal report is also known as

a) Incident report
b) Release note
c) Review report
c) Audit report

24. Testing of software used to convert data from existing systems for use in replacement systems

a) Data driven testing
b) Migration testing
c) Configuration testing c) Back to back testing

25. Big bang approach is related to

a) Regression testing
b) Inter system testing
c) Re-testing
c) Integration testing

26. Cause effect graphing is related to the standard

a) BS7799
b) BS 7925/2
c) ISO/IEC 926/1
c) ISO/IEC 2382/1

27. «The tracing of requirements for a test level through the layers of a test documentation» done by

a) Horizontal traceability
b) Depth traceability
c) Vertical traceability
c) Horizontal & Vertical traceability

28. A test harness is a

a) A high level document describing the principles, approach and major objectives of the organization regarding testing
b) A distance set of test activities collected into a manageable phase of a project
c) A test environment comprised of stubs and drives needed to conduct a test
c) A set of several test cases for a component or system under test

29. You are a tester for testing a large system. The system data model is very large with many attributes and there are a lot of inter dependencies with in the fields. What steps would you use to test the system and also what are the efforts of the test you have taken on the test plan

a) Improve super vision, More reviews of artifacts or program means stage containment of the defects.
b) Extend the test plan so that you can test all the inter dependencies
c) Divide the large system in to small modules and test the functionality
c) Test the interdependencies first, after that check the system as a whole

30. Change request should be submitted through development or program management. A change request must be written and should include the following criteria.

I. Definition of the change
II. Documentation to be updated
III. Name of the tester or developer
IV. Dependencies of the change request.

a) I, III and IV
b) I, II and III
c) II, III and IV c) I, II and IV

31. «Entry criteria» should address questions such as

I. Are the necessary documentation, design and requirements information available that will allow testers to operate the system and judge correct behavior.
II. Is the test environment-lab, hardware, software and system administration support ready?
III. Those conditions and situations that must prevail in the testing process to allow testing to continue effectively and efficiently.
IV. Are the supporting utilities, accessories and prerequisites available in forms that testers can use

a) I, II and IV
b) I, II and III
c) I, II, III and IV
c) II, III and IV.

32. «This life cycle model is basically driven by schedule and budget risks». This statement is best suited for

a) Water fall model
b) Spiral model
c) Incremental model
c) V-Model

33. The bug tracking system will need to capture these phases for each bug.

I. Phase injected
II. Phase detected
III. Phase fixed
IV. Phase removed

a) I, II and III
b) I, II and IV
c) II, III and IV
c) I, III and IV

34. One of the more daunting challenges of managing a test project is that so many dependencies converge at test execution. One missing configuration file or hard ware device can render all your test results meaning less. You can end up with an entire platoon of testers sitting around for days. Who is responsible for this incident?

a) Test managers faults only
b) Test lead faults only
c) Test manager and project manager faults
c) Testers faults only

35. System test can begin when?

I. The test team competes a three day smoke test and reports on the results to the system test phase entry meeting
II. The development team provides software to the test team 3 business days prior to starting of the system testing
III. All components are under formal, automated configuration and release management control

a) I and II only
b) II and III only
c) I and III only
c) I, II and III

36. Test charters are used in _____ testing

a) Exploratory testing
b) Usability testing
c) Component testing
c) Maintainability testing

Here are a few tips for answering questions correctly in the ISTQB Foundation Level certification exam:

(1) The questions in the exam often contain keywords like BEST, FIRST, MOST etc. More than one answer options might be correct but we need to select the best answer, in accordance with the keyword specified in the question.

(2) Some questions may contain extraneous information. Often, all the information presented in a question may not be needed to select the next answer. You should learn to ignore such extraneous information and not let it confuse you.

(3) If you are not able to determine the correct answer for a particular question, follow the process of elimination. Eliminate as many answer options as possible, and then make a better guess at the correct answer.

(4) Most of the questions are very easy and need nothing more than a thorough study of the syllabus.

(5) Sometimes, closely matching but confusing options may be provided for a question. In order to avoid getting confused, first study and understand the question, and then work out the correct response (before going through the answer options). Once you have thought of the best solution, look at the available answers and choose the one, which is the closest to your answer.

Hope these tips help you in choosing the correct answers to the questions in the exam!

1. Which option is part of the 'implementation and execution' area of the fundamental test process?

A. Developing the tests.
B. Comparing actual and expected results.
C. Writing a test summary.
D. Analysing lessons learnt for future releases.

Explanation in favor of the correct answer
A. is part of 'Analysis and design'.
C. is part of 'Evaluating exit criteria and reporting'.
D. is part of 'Test closure activities'.

2. The five parts of the fundamental test process have a broad chronological order. Which of the options gives three different parts in the correct order?

A. Implementation and execution, planning and control, analysis and design.
B. Analysis and design, evaluating exit criteria and reporting, test closure activities.
C. Evaluating exit criteria and reporting, implementation and execution, analysis and design.
D. Evaluating exit criteria and reporting, test closure activities, analysis and design.

Explanation in favor of the correct answer
All other answers have at least one stage of the fundamental test process in the wrong sequence.

3. Which statement is most true?

A. Different testing is needed depending upon the application.
B. All software is tested in the same way.
C. A technique that finds defects will always find defects.
D. A technique that has found no defects is not useful.

Explanation in favor of the correct answer

This is a restatement of the testing principle 'Testing is context dependent'.

4. A bug or defect is:

A. A mistake made by a person;
B. A run-time problem experienced by a user;
C. The result of an error or mistake;
D. The result of a failure, which may lead to an error?

5. The effect of testing is to:

A. Increase software quality;
B. Give an indication of the software quality;
C. Enable those responsible for software failures to be identified;
D. Show there are no problems remaining?

6. What is retesting?

A. Running the same test again in the same circumstances to reproduce the problem.
B. A cursory run through a test pack to see if any new errors have been introduced.
C. Checking that the predetermined exit criteria for the test phase have been met.
D. Running a previously failed test against new software/data/documents to see if the problem is solved.

7. Which of the following is correct?

Debugging is:

A. Testing/checking whether the software performs correctly.
B. Checking that a previously reported defect has been corrected.
C. Identifying the cause of a defect, repairing the code and checking the fix is correct.
D. Checking that no unintended consequences have occurred as a result of a fix.

Explanation in favor of the correct answer

A. Is a brief definition of testing.
B. Is retesting.
D. Is regression testing.

8. When is testing complete?

A. When time and budget are exhausted.
B. When there is enough information for sponsors to make an informed decision about release.
C. When there are no remaining high priority defects outstanding.
D. When every data combination has been exercised successfully.

Explanation in favor of the correct answer

Sometimes time/money does signify the end of testing, but it is really complete when everything that was set out in advance has been achieved.

9. Which list of levels of tester independence is in the correct order, starting with the most independent first?

A. Tests designed by the author; tests designed by another member of the development team; tests designed by someone from a different company.
B. Tests designed by someone from a different department within the company; tests designed by the author; tests designed by someone from a different company.
C. Tests designed by someone from a different company; tests designed by someone from a different department within the company; tests designed by another member of the development team.
D. Tests designed by someone from a different department within the company; tests designed by someone from a different company; tests designed by the author.

Explanation in favor of the correct answer

This option has someone nearer to the written code in each statement. All other options are not in this order.

10. Which of the following is in the correct order (typically)?

A. Unit testing, system testing, acceptance testing, maintenance testing.
B. System testing, unit testing, acceptance testing, maintenance testing.
C. Acceptance testing, system testing, maintenance testing, unit testing.
D. Unit testing, maintenance testing, system testing, acceptance testing.

11. Which of the following is usually the test basis for integration testing?

A. Program specification
B. Functional specification
C. Technical specification
D. Requirement specification

Explanation in favor of the correct answer

Option (A) is used for unit testing.
Option (B) is used for system testing and
Option (D) is used for acceptance testing.

12. Which of the following are examples of iterative development models?

(i) V-model
(ii) Rapid Application Development model
(iii) Waterfall model
(iv) Agile development model

A. (i) and (ii)
B. (ii) and (iii)
C. (ii) and (iv)
D. (iii) and (iv)

Explanation in favor of the correct answer

The other two models are sequential models.

13. Which of the following is not true of regression testing?

A. It can be carried out at each stage of the life cycle.
B. It serves to demonstrate that the changed software works as intended.
C. It serves to demonstrate that software has not been unintentionally changed.
D. It is often automated.

Explanation in favor of the correct answer

This is a definition of confirmation testing. The other three options are true of regression testing.

14. One of the roles in a review is that of moderator, which of the following best describes this role?

A. Plans the review, runs the review meeting and ensures that follow-up activities are completed.
B. Allocates time in the plan, decides which reviews will take place and that the benefits are delivered.
C. Writes the document to be reviewed, agrees that the document can be reviewed, and updates the document with any changes.
D. Documents all issues raised in the review meeting, records problems and open points.

15. What do static analysis tools analyze?

A. Design
B. Test cases
C. Requirements
D. Program code

16. Which of the following is most likely to be a benefit of using static techniques?

A. Fewer performance defects.
B. Productivity improvements in the development process.
C. More efficient regression testing.
D. Quick return on investment in static analysis tools.

Explanation in favor of the correct answer

Although the other options might be seen as benefits they are not amongst the most likely benefits. Option (B) is the benefit that is most likely to be realized.

17. Which of the following are static techniques?

A. Walkthrough.
B. State transition testing.
C. Decision table testing.
D. Statement testing.

Explanation in favor of the correct answer

Options (B), (C) and (D) are all dynamic test techniques.

18. Which one of the following roles is typically used in a review?

A. Champion.
B. Author.
C. Project sponsor.
D. Custodian.

Explanation in favor of the correct answer

The Author is the only role that is typically used in a review.

A Champion might sponsor the review process but is not a defined role within an actual review; a Project Sponsor, if technically competent, might be asked to play a defined role within the review process, but whilst using that role they will not be a Project Sponsor; finally, a Custodian might ensure the results are stored safely but would not be involved in the actual review itself.

19. Which of the following defines the expected result of a test?

A. Test case
B. Test procedure
C. Test execution schedule
D. Test condition

20. Which of the following describes structure-based (white-box) test case design techniques?

A. Test cases are derived systematically from models of the system.
B. Test cases are derived systematically from the tester's experience.
C. Test cases are derived systematically from the delivered code.
D. Test cases are derived from the developers' experience.

Explanation in favor of the correct answer

Answer (A) relates to specification-based testing, answer (B) relates to experience-based testing and answer (D) could relate either to debugging or to experience-based techniques.

21. Which of the following is a structure-based (white-box) technique?

A. Decision table testing
B. State transition testing
C. Statement testing
D. Boundary value analysis

Explanation in favor of the correct answer

All other options are specification-based (black-box) techniques, and the main distracter is answer (A) because decision table testing could be confused with decision testing.

22. What is the main purpose of use case testing?

A. To identify defects in process flows related to typical use of the system.
B. To identify defects in the connections between components.
C. To identify defects in the system related to extreme scenarios.
D. To identify defects in the system related to the use of unapproved programming practices.

Explanation in favor of the correct answer

Answer (B) relates to integration testing; answer (C) could relate to boundary value analysis or performance testing, but use cases exercise typical process flows rather than extreme examples; answer (D) relates to static analysis.

23. What is the purpose of exit criteria?

A. To identify how many tests to design.
B. To identify when to start testing.
C. To identify when to stop testing.
D. To identify who will carry out the test execution.

24. What can a risk-based approach to testing provide?

A. The types of test techniques to be employed.
B. The total tests needed to provide 100 per cent coverage.
C. An estimation of the total cost of testing.
D. Only that test execution is effective at reducing risk.

25. When assembling a test team to work on an enhancement to an existing system, which of the following has the highest level of test independence?

A. A business analyst who wrote the original requirements for the system.
B. A permanent programmer who reviewed some of the new code, but has not written any of it.
C. A permanent tester who found most defects in the original system.
D. A contract tester who has never worked for the organization before.

Explanation in favor of the correct answer

In this scenario, the contract tester who has never worked for the organization before has the highest level of test independence. The three others are less independent as they are likely to make assumptions based on their previous knowledge of the requirements, code and general functionality of the original system.

Note that independence does not necessarily equate to most useful. In practice most test or project managers would recruit a permanent tester who has worked on the original system in preference to a contract tester with no knowledge of the system. However, when assembling a team it would be useful to have staff with varying levels of test independence and system knowledge.

26. Which of the following terms is used to describe the management of software components comprising an integrated system?

A. Configuration management

B. Incident management
C. Test monitoring
D. Risk management

Explanation in favor of the correct answer

Incident management is the collection and processing of incidents raised when errors and defects are discovered. Test monitoring identifies the status of the testing activity on a continuous basis. Risk management identifies, analyses and mitigates risks to the project and the product. Configuration management is concerned with the management of changes to software components and their associated documentation and testware.

27. A new system is about to be developed. Which of the following functions has the highest level of risk?

A. Likelihood of failure = 20%; impact value = £100,000
B. Likelihood of failure = 10%; impact value = £150,000
C. Likelihood of failure = 1%; impact value = £500,000
D. Likelihood of failure = 2%; impact value = £200,000

Explanation in favor of the correct answer

In (B) the product of probability ? impact has the value ?15,000; in (C) the value is ?5,000 and in (D) it is ?4,000. The value of ?20,000 in (A) is therefore the highest.

28. Which of the following statements about risks is most accurate?

A. Project risks rarely affect product risk.
B. Product risks rarely affect project risk.
C. A risk-based approach is more likely to be used to mitigate product rather than project risks.
D. A risk-based approach is more likely to be used to mitigate project rather than product risks.

Explanation in favor of the correct answer

In general, project risk and product risk can be hard to differentiate. Anything that impacts on the quality of the delivered system is likely to lead to delays or increased costs as the problem is tackled. Anything causing delays to the project is likely to threaten the delivered system's quality. The risk-based approach is an approach to managing product risk through testing, so it impacts most directly on product risk.

29. For which of the following activities in the fundamental test process would an incident management tool be most useful?

A. Test planning and control
B. Test analysis and design
C. Test implementation and execution
D. Evaluating exit criteria and reporting

Explanation in favor of the correct answer

Incident management tools are most useful during test implementation and execution as this is the stage at which the tool is used to raise, manage, retest and close incidents.

The data collected during the defect life cycle can then be manipulated into information that is useful for other activities within the fundamental test process.

Information on numbers of defects outstanding may be useful for evaluating exit criteria (option (D)). This information could also be used for planning future testing and for taking control (option (A)).

Incident management tools can also assist in test analysis and design (option (B)) as information about defects found when testing the previous release of the system could be used when analyzing the type of testing required for the next enhancement.

30. Which of the following defects is most likely to be found by a test harness?

A. Variance from programming standards.
B. A defect in middleware.
C. Memory leaks.
D. Regression defects.

Explanation in favor of the correct answer

Variance from programming standards defects (option (A)) are found during the review or static testing process. Therefore a test harness is unlikely to find a defect in programming standards.

Memory leak defects (option (C)) could potentially be found by a test harness designed to run many test cases.

Regression defects (option (D)) could be found using many types of test tool.

Defects in middleware (option (B)) are generally more likely to be found by a test harness or a dynamic analysis tool than by any other type of tool.

31. A test management tool is most likely to integrate with which of the following tools?

A. Performance testing tool
B. Test data preparation tool
C. Static analysis tool
D. Requirements management tool

Explanation in favor of the correct answer

Requirements management tools (option (D)) often have interfaces with test management tools. In some cases they will be sold as a package or in other cases a test management tool may have its own requirements module. The use of such interfaces or integrated packages aids traceability from requirements through to test scripts and defects.

Performance management tools (option (A)), test data preparation tools (option (B)) and static analysis tools (option (C)) are unlikely to have an interface or be integrated with a test management tool. They serve different purposes and therefore there is little need for such interfaces.

32. Which of the following are aids to good communication, and which hinder it?

i. Try to understand how the other person feels.
ii. Communicate personal feelings, concentrating upon individuals.
iii. Confirm the other person has understood what you have said and vice versa.
iv. Emphasise the common goal of better quality.
v. Each discussion is a battle to be won.

A. (i), (ii) and (iii) aid, (iv) and (v) hinder.
B. (iii), (iv) and (v) aid, (i) and (ii) hinder.
C. (i), (iii) and (iv) aid, (ii) and (v) hinder.
D. (ii), (iii) and (iv) aid, (i) and (v) hinder.

33. Which pair of definitions is correct?

A. Regression testing is checking that the reported defect has been fixed; retesting is testing that there are no additional problems in previously tested software.
B. Regression testing is checking there are no additional problems in previously tested software; retesting enables developers to isolate the problem.
C. Regression testing involves running all tests that have been run before; retesting runs new tests.
D. Regression testing is checking that there are no additional problems in previously tested software, retesting is demonstrating that the reported defect has been fixed.

Explanation in favor of the correct answer

Regression testing is testing that nothing has regressed. Retesting (or confirmation testing) confirms the fix is correct by running the same test after the fix has been made. No other option has both of these as true.

34. The following statements relate to activities that are part of the fundamental test process.

i. Evaluating the testability of requirements.
ii. Repeating testing activities after changes.
iii. Designing the test environment set-up.
iv. Developing and prioritizing test cases.
v. Verifying the environment is set up correctly.

Which statement below is TRUE?

A. (i) and (ii) are part of analysis and design, (iii), (iv) and (v) are part of test implementation and execution.
B. (i) and (iii) are part of analysis and design, (ii), (iv) and (v) are part of test implementation and execution.
C. (i) and (v) are part of analysis and design, (ii), (iii) and (iv) are part of test implementation and execution.
D. (i) and (iv) are part of analysis and design, (ii), (iii) and (v) are part of test implementation and execution.

Explanation in favor of the correct answer

All other answers contain an activity identified as analysis and design that is part of implementation and test execution.

35. Which statement correctly describes the public and profession aspects of the code of ethics?

A. Public: Certified software testers shall act in the best interests of their client and employer (being consistent with the wider public interest). Profession: Certified software testers shall advance the integrity and reputation of their industry consistent with the public interest.
B. Public: Certified software testers shall advance the integrity and reputation of the profession consistent with the public interest. Profession: Certified software testers shall consider the wider public interest in their actions.
C. Public: Certified software testers shall consider the wider public interest in their actions. Profession: Certified software testers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of their profession.
D. Public: Certified software testers shall consider the wider public interest in their actions. Profession: Certified software testers shall advance the integrity and reputation of their industry consistent with the public interest.

Explanation in favor of the correct answer

All the answers reflect the definition of two of the items from the code of ethics, and care must be taken in searching for the Public item because 'public' or 'public interest' are used in several of the eight items in the code. The key is that 'public' is the main item, rather than a subsidiary. In the order given in the options, A. reflects Client and employer and Profession while B. gives Profession and Public (the correct choices, but the wrong way round). Option C. gives Public and Self, leaving the last option D. to give Public and Profession.

36. Which of the following is true about the V-model?

A. It has the same steps as the waterfall model for software development.
B. It is referred to as a cyclical model for software development.
C. It enables the production of a working version of the system as early as possible.
D. It enables test planning to start as early as possible.

37. Which of the following is true of iterative development?

A. It uses fully defined specifications from the start.
B. It involves the users in the testing throughout.
C. Changes to the system do not need to be formally recorded.
D. It is not suitable for developing websites.

38. A top-down development strategy affects which level of testing most?

A. Component testing
B. Integration testing
C. System testing
D. User acceptance testing

Explanation in favor of the correct answer

The development strategy will affect the component testing (option (A)), in so far as it cannot be tested unless it has been built. Options (C) and (D) require the system to have been delivered; at these points the development strategy followed is not important to the tester. Option (B) needs knowledge of the development strategy in order to determine the order in which components will be integrated and tested.

39. Which of the following is a non-functional requirement?

A. The system will enable users to buy books.
B. The system will allow users to return books.
C. The system will ensure security of the customer details.
D. The system will allow up to 100 users to log in at the same time.

Explanation in favor of the correct answer

The other options are functional requirements. Note that security is regarded as a functional requirement in this syllabus.

40. Which of the following statements are true?

(i) For every development activity there is a corresponding testing activity.
(ii) Each test level has the same test objectives.
(iii) The analysis and design of tests for a given test level should begin after the corresponding development activity.
(iv)Testers should be involved in reviewing documents as soon as drafts are available in the development life cycle.

A. (i) and (ii)
B. (iii) and (iv)
C. (ii) and (iii)
D. (i) and (iv)

Explanation in favor of the correct answer

Option (ii) is incorrect: each test level has a different objective.

Option (iii) is also incorrect: test analysis and design should start once the documentation has been completed.

41. Which of the following statements are correct for walkthroughs?

(i) Often led by the author.
(ii) Documented and defined results.
(iii) All participants have defined roles.
(iv) Used to aid learning.
(v) Main purpose is to find defects.

A. (i) and (v) are correct.
B. (ii) and (iii) are correct.
C. (i) and (iv) are correct.
D. (iii) and (iv) are correct.

42. Which of the following has the typical formal review activities in the correct sequence?

A. Kick-off, review meeting, planning, follow-up.
B. Kick-off, planning, review meeting, re-work.
C. Planning, kick-off, individual preparation, review meeting.
D. Planning, individual preparation, follow-up, re-work.

Explanation in favor of the correct answer

The correct sequence is: planning, kick-off, individual preparation, review meeting, re-work, follow-up. All of the other options have either the activities in the wrong order or activities missing from the strict flow.

43. Which of the following statements are true?

(i) Defects are likely to be found earlier in the development process by using reviews rather than static analysis.
(ii) Walkthroughs require code but static analysis does not require code.
(iii) Informal reviews can be performed on code and specifications.
(iv) Dynamic techniques are generally used before static techniques.
(v) Dynamic techniques can only be used after code is ready to be executed.

A. (i), (ii), (vi).
B. (ii), (iii), (v).
C. (i), (iv), (v).
D. (i), (iii), (v).

Explanation in favor of the correct answer

The other answers are incorrect because:

(ii) Walkthroughs do not require code and static analysis does require code.

(iv) Static techniques do not execute the code and therefore can be run before and after the code is ready for execution.

44. Which of the following is most likely to be performed by developers?

A. Technical review of a functional specification.
B. Walkthrough of a requirements document.
C. Informal review of a program specification.
D. Static analysis of a software model.

Explanation in favor of the correct answer

Static analysis is done almost exclusively by developers. The other review types would be performed using a combination of developers, testers and other interested stakeholders.

45. Which of the following are most characteristic of structure-based testing?

(i) Information about how the software is constructed is used to derive test cases.
(ii) Statement coverage and/or decision coverage can be measured for existing test cases.
(iii) The knowledge and experience of people are used to derive test cases.
(iv) Test cases are derived from a model or specification of the system.

A. (i) and (ii)
B. (ii) and (iii)
C. (ii) and (iv)
D. (i) and (iii)

46. Which of the following are the most important factors to be taken into account when selecting test techniques?

(i) Tools available.
(ii) Regulatory standards.
(iii) Experience of the development team.
(iv) Knowledge of the test team.

The need to maintain levels of capability in each technique.

A. (i) and (ii)
B. (ii) and (iv)
C. (iii) and (iv)
D. (i) and (v)

Explanation in favor of the correct answer

Answer (i) looks temptingly right, and the availability of tools might make the use of a technique more or less attractive, but it would not be decisive in the way that regulatory standards and tester knowledge are.

Answer (iii) is irrelevant because testing should be independent of development anyway, but it could tempt someone who is unsure about the relationship between development and testing.

Answer (v) is a factor in managing the test team, and experience would need to be maintained, but this should not influence the selection of techniques for a live project.

47. Which of the following are most likely to be used when developing a test strategy or test approach?

(i) Failure-based approach
(ii) Test specification approach
(iii) Model-based approach
(iv) Finance-based approach

A. (iii) and (ii)
B. (i) and (iv)
C. (ii) and (i)
D. (i) and (iii)

48. What test roles (or parts in the testing process) is a developer most likely to perform?

(i) Executing component integration tests.
(ii) Static analysis.
(iii) Setting up the test environment.
(iv) Deciding how much testing should be automated.

A. (i) and (ii)
B. (i) and (iv)
C. (ii) and (iii)
D. (iii) and (iv)

Explanation in favor of the correct answer

(i) Executing component integration tests is usually done by developers. Developers are usually responsible for unit and component integration testing. Independent testing usually follows at system and acceptance test levels.
(ii) Static analysis is usually done by developers because: it requires an understanding of the code and therefore the person doing this needs skills in the programming language; and it can be done as soon as the code is written. Therefore it is quick and effective for the developer to do it. The risk of a lack of test independence can be mitigated by performing independent system and acceptance testing.
(iii) Setting up the test environment is an activity typically performed by a tester. It may require support from developers and staff from other departments and on some occasions environments could be set up by developers. However, it is a task that could be done by a tester rather than a developer.
(iv) Deciding how much testing should be automated is typically a decision made by the test leader, who will consult other staff in the decision-making process. Developers may be involved and their skills may be required to automate some tests. However, the decision on how much to automate should not be made by developers.

49. Which of the following are valid justifications for developers testing their own code during unit testing?

(i) Their lack of independence is mitigated by independent testing during system and acceptance testing.
(ii)A person with a good understanding of the code can find more defects more quickly using white-box techniques.
(iii)Developers have a better understanding of the requirements than testers.
(iv)Testers write unnecessary incident reports because they find minor differences between the way in which the system behaves and the way in which it is specified to work.

A. (i) and (ii)
B. (i) and (iv)
C. (ii) and (iii)
D. (iii) and (iv)

Explanation in favor of the correct answer

It is unlikely that developers will have a better understanding of the requirements than testers, partly because testers work closely with the user community (and may be drawn from it) and partly because developers seldom work with the complete set of requirements in a medium to large development.

Testers may raise incidents related to the difference between user expectations and the specification, but these are not unnecessary. Such issues are more likely to arise at the later stages of testing.

Early testing (unit testing) is usually done most effectively by developers with a good understanding of the code and the development environment; they can be more efficient and more effective at this level. Later independent stages of testing offset any disadvantage from the lack of independence at unit testing level.

50. Which of the following pairs of test tools are likely to be most useful during the test analysis and design stage of the fundamental test process?

(i) Test execution tool
(ii) Test data preparation tool
(iii) Test management tool
(iv) Requirements management tool

A. (i) and (ii)
B. (i) and (iv)
C. (ii) and (iii)
D. (iii) and (iv)

Quick Start to preparation for ISTQB Foundation Level Exam

A) Important Facts you must know

1) ISTQB Foundation Certificate (Certified Tester Foundation Level) is an entry qualification for the ISTQB Advanced Certificate exam.

2) The ISTQB Certified Tester Foundation Level Syllabus has been updated in 2010. Following quick start tips are based upon the latest syllabus.

3) ISTQB Foundation Level exam is intended to check your knowledge of the entire discipline of software testing in a broader sense.

4) The Foundation Level syllabus is aimed it at people with varying levels of experience in testing, including persons with no experience at all.

5) The Foundation Level syllabus is freely available for download from www.istqb.org

B) K-Levels related to topics in the Foundation Level Syllabus: Every topic in the syllabus corresponds to certain level of understanding, represented by the term K1, K2, K3 or K4

1) Level K1 refers to the ability to recall, so that you should be able to remember but not necessarily use or explain.

2) Level K2 refers to the ability to explain a topic or to classify information or make comparisons.

3) Level K3 refers to the ability to apply a topic in a practical scenario.

4) Level K4 refers to the ability to analyze a situation or a set of information to determine what action to take.

C) K-Levels & associated levels of difficulty:

1) K1, K2, K3 and K4 levels do not reflect on being easy, moderate or hard. The K level identifies the level of understanding being tested, not the difficulty of the question.

2) It is possible that K2 questions might be more difficult (in the sense of being more challenging to answer) than a K3 question.

3) Generally K1 questions will be the most straightforward and if you are aware of the content of the syllabus, you won't have difficulty in answering any K1 question.

D) Breakup of Questions in the CTFL exam:

1) One-hour exams comprises of 40 multiple-choice questions. Every question has the same value.

2) 26 correct answers will guarantee a pass. There are no negative marking for the wrong answers.

3) The breakup of questions as per K-Levels is as under:

a) K1 50%, 20 Questions

a) K2 30%, 12 Questions

c) K3 and K4 20%, i.e. 8 questions

E) Type of Questions in the exam: Following shall generally apply.

1) All questions will contain a 'stem', which states the question, and four optional answers.

2) One and only one of the optional answers will be correct. The remaining options shall be incorrect.

3) If you are not sure of the correct answer you will possibly find one or more alternatives equally right.

4) Questions will be stated as clearly as possible, even emphasizing keywords by emboldening or underlining where this will add clarity.

5) There can be few negative questions (e.g. which of the following is not true?) and any negative questions included will be worded so that there is no ambiguity.

6) Questions will be set to test your knowledge of the content of the topics covered in the syllabus and not your knowledge of the syllabus itself.

7) Generally K1 questions will be of the straightforward type.

8) There will not be any K-Level label on the questions in the exam.

F) Main Sections of Foundation Level Syllabus: The syllabus is broken down into six sections

1) Section 1: Fundamentals of testing – 7 Questions

2) Section 2: Testing throughout the software life cycle – 6 Questions

3) Section 3: Static techniques – 3 Questions

4) Section 4: Test design techniques – 12 Questions

5) Section 5: Test management – 8 Questions

6) Section 6: Tool support for testing – 4 Questions

Above proportions of questions is approximate and the exact breakdown is not mandatory, but exams are by & large structured as per these & are quite close to these proportions as far as possible.

G) Relation between K-Levels & Different Topics in Testing:

1) Level K4: It deals with statement and decision coverage. You can expect maximum two K4 questions and more likely only one, and the topic will be assessing statement and/or decision coverage for completeness with respect to meeting the specified exit criteria.

2) Level K3: Majority of K3 questions are likely to be based on Section 4 of the syllabus, hence most K3 questions will be about applying test design techniques.

3) Level K2: K2 questions shall be with more searching stem. The common type of K2 question is known as the Roman type. This is suited to questions involving comparisons or testing the candidate's ability to identify correct combinations of information.

Topics can be examined at any level up to the maximum described in the syllabus for the particular topic. Hence a K3 topic can be examined at the K1 or the K2 level as well.

H) Tips for better performance in the exam:

1) Read the syllabus carefully & you should be quite familiar with it. Generally the questions come directly from the syllabus and usually even the wording too is similar to that used in the syllabus.

2) Solve as many example questions as you can so that you become familiar with the wording of questions as well as types of questions.

3) It is a short duration exam, hence you will not be able to study the entire paper in depth. Hence to begin with, study the entire paper answering those questions that are straightforward and for which you know the answer.

After finishing this simple task you will have a smaller task to complete and you will probably have taken less than a minute for each question that you have already answered, giving you more time to concentrate on those that you will need more time to answer.

4) If you have prepared well, you can answer 40 questions in less than 45 minutes.

J) How to prepare for the CTFL Exam in the shortest possible time & without any formal training:

Step 1: Deep study of the software testing basics as covered in the latest CTFL Syllabus by preparing from the Crash course study material available absolutely free.

Download 30 Parts of Complete Study Material - ISTQB Foundation Level Exam

Step 2: Study the K-Level wise special Objective Type Questions especially prepared as per the latest CTFL Syllabus.

Download 6 Parts of K-Level wise Objective Type Questions - ISTQB Foundation Level Exam

Step 3: Polish your learning by study of past examination papers – An exhaustive database of 750 unique questions. When we say Unique means, not even a single question gets repeated in the Question Bank.

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