



**Swedish Software Testing Board (SSTB)
International Software Testing Qualifications Board (ISTQB)**

Foundation Certificate in Software Testing

Practice Exam (Syllabus 2011)

Ver 2015, 2015-12-19

Time allowed: 1 hour 15 minutes

**There are 40 questions, each question 1 point
You need 26 points or more to pass**

You have to follow directives given to you by the invigilator during the whole exam

Mark your answers within the marked area in the provided answer sheet. Try to answer all 40 questions. Mark only one answer per question. Erase any answer you decide to change and mark your new chosen answer clearly.

You are not allowed to keep the questionnaire, other documents or notes. All papers must be handed back to the invigilator at the end of the exam.

1.	<p>Which of the following statements <u>BEST</u> describes one of the seven key principles of software testing?</p> <ul style="list-style-type: none"> a) Automated tests avoid exhaustive testing better than manual tests b) The purpose of testing is to demonstrate the absence of defects c) It is normally impossible to test all input / output combinations for a software system d) With sufficient effort and tool support, exhaustive testing is feasible for all software
2.	<p>Which of the following statements is the <u>MOST</u> valid goal for a test team during development?</p> <ul style="list-style-type: none"> a) To determine whether enough component testing was executed within system testing b) To prove that any remaining faults will not cause any failures c) To detect as many failures as possible so that faults can be identified and corrected d) To prove that all faults are identified
3.	<p>Which one of these tasks would you expect to be performed during the Test Analysis and Design phase of the Fundamental Test Process?</p> <ul style="list-style-type: none"> a) Analyzing lessons learned for process improvement b) Reviewing the test basis c) Defining test objectives d) Creating test suites from test procedures
4.	<p>Below is a list of problems that can be observed during testing or in production. Which one of these problems is <u>MOST</u> likely a failure?</p> <ul style="list-style-type: none"> a) The product crashed when the user selected an option in a dialog box b) One source code file included in the build has the wrong version c) The computation algorithm used wrong input variables d) The developer misinterpreted the requirement for the algorithm
5.	<p>Which one of the following attitudes, qualifications or actions would lead to problems (or conflict) within mixed teams of testers and developers, when observed in reviews and tests?</p> <ul style="list-style-type: none"> a) Testers and developers communicate defects as criticism of people, not as criticism of the software product b) Testers expect that there might be defects in the software product which the developers have not found and fixed c) Testers and developers are curious and focused on finding defects d) Testers and developers are sufficiently qualified to find failures and faults

6.	Which of the following statements are TRUE? A. Software testing may be required to meet legal or contractual requirements B. Software testing is mainly needed to improve the quality of the product released by the developers C. Rigorous testing and fixing of found defects could help reduce the risk of problems occurring in an operational environment D. Rigorous testing is sometimes used to prove that all failures have been found a) A, B and C are true; D is false b) A is true; B, C, and D are false c) C and D are true; A and B are false d) A and C are true; B and D are false
7.	Which one of the following statements mostly correctly describes the difference between testing and debugging? a) Dynamic testing prevents causes of failures; debugging removes the failures b) Testing identifies the source of defects; debugging analyzes the faults and proposes prevention activities c) Dynamic testing shows failures caused by defects; debugging finds, analyzes and removes the causes of failures in the software d) Testing removes faults; debugging identifies the causes of failures
8.	Which ONE of the statements below BEST describes non-functional testing? a) Non-functional testing is the process of testing an integrated system to verify that it meets specified requirements b) Non-functional testing is testing without reference to the internal structure of a system c) Non-functional testing is testing system attributes, such as usability, reliability or maintainability d) Non-functional testing is the process of testing to determine system compliance with coding standards
9.	When working with software development models, what is important to do? a) Choose the waterfall model, because it is the most proven model b) Start with the V-model, and then move to either the iterative or the incremental model c) Change the organization to fit the model, not vice versa d) If needed, adapt the models to project and product characteristics

<p>10.</p>	<p>Which ONE of the following characteristics of good testing and applies to any software development life cycle model?</p> <ul style="list-style-type: none"> a) All test levels are planned and completed for each developed feature b) For every development activity there is a corresponding testing activity c) Testers are involved as soon as the first piece of code can be executed d) Acceptance testing is always the final test level to be applied
<p>11.</p>	<p>Which ONE of the following is an example of maintenance testing?</p> <ul style="list-style-type: none"> a) To test corrected defects during development of a new system b) To integrate functions during the development of a new system c) To test enhancements to an existing operational system d) To handle complaints about system quality during user acceptance testing
<p>12.</p>	<p>Which of the following statements are true or false?</p> <ul style="list-style-type: none"> A. Regression testing and re-testing are the same B. Regression tests show if all defects have been resolved C. Regression tests are good candidates for test automation D. Regression tests are performed to uncover defects in working functionalities as a result of changes in the software E. Regression tests should not be performed during integration testing. <ul style="list-style-type: none"> a) A and B are true; C, D and E are false b) C and D are true; A, B and E are false c) B, D and E are true; A, and C are false d) A, C and E are true; B and D are false
<p>13.</p>	<p>Which ONE of the following statements comparing component testing and system testing is TRUE?</p> <ul style="list-style-type: none"> a) Test cases for component testing are usually derived from component specifications, design specifications, or data models, whereas test cases for system testing are usually derived from requirement specifications, functional specifications or use cases b) Component testing only focuses on functional characteristics, whereas system testing focuses on functional and non-functional characteristics c) Component testing verifies the functionality of software modules, program objects, and classes that are separately testable, whereas system testing verifies interfaces between components and interactions between different parts of the system d) Component testing is the responsibility of the technical testers, whereas system testing typically is the responsibility of the users of the system

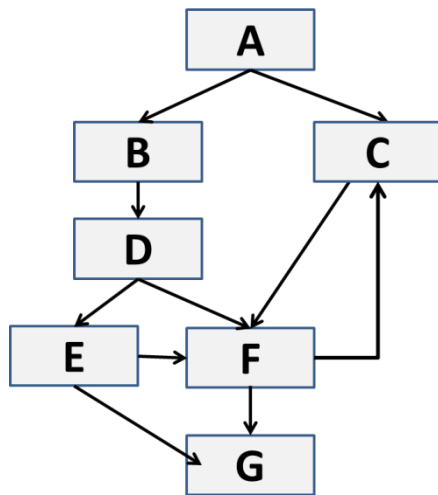
14.	Which ONE of the following describes the main phases of a formal review? a) Planning, preparation, review meeting, rework, closure, follow up b) Initiation, status, preparation, review meeting, rework, follow up c) Preparation, review meeting, rework, closure, follow up, root cause analysis d) Planning, kick off, individual preparation, review meeting, rework, follow up
15.	Which ONE of the review types below is the BEST option to choose for reviewing safety critical components in a software project? a) Desk checking b) Walkthrough c) Informal Review d) Inspection
16.	Which ONE of the following statements about tool-supported static analysis is <u>FALSE</u>? a) Tool-supported static analysis can find defects that are not easily found by dynamic testing b) Tool-supported static analysis is a good way to force failures into the software c) Tool-supported static analysis can be used as a preventive measure with appropriate processes in place d) Tool-supported static analysis can result in cost savings by finding defects early

17. One of the test goals for the project is to have 100% decision coverage. The following three tests have been executed for the control flow graph shown below.

Test A covers path: A, B, D, E, G.

Test B covers path: A, B, D, E, F, G.

Test C covers path: A, C, F, C, F, C, F, G.



Which of the following statements related to the decision coverage goal is correct?

- a) Decision E has not been tested completely
- b) Decision F has not been tested completely
- c) Decision D has not been tested completely
- d) Decision coverage of 100% has been achieved

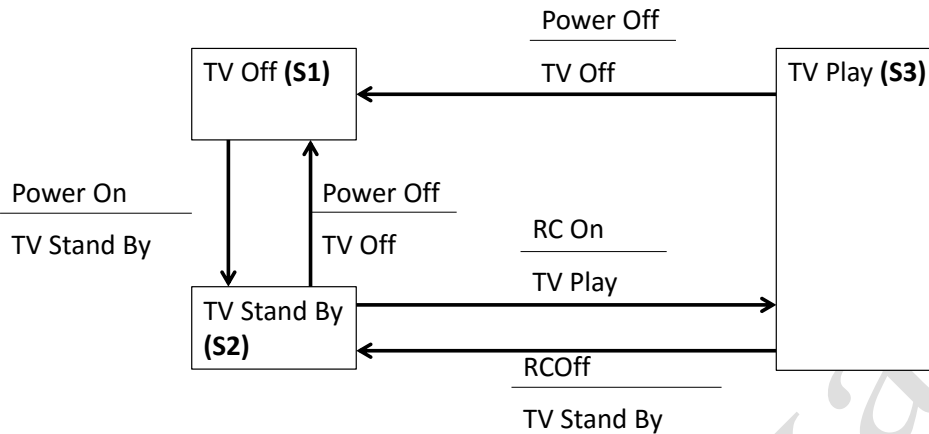
18. A defect was found during testing:

While receiving customer data from a server the system crashed. The defect was fixed by correcting the code that checked the network availability during data transfer. The existing test cases covered 100% of all statements of the corresponding module. To verify the fix and to ensure more extensive coverage, some new tests were designed and added to the test suite and executed.

What types of testing are mentioned above?

- A. Functional testing.
 - B. Structural testing.
 - C. Re-testing.
 - D. Performance testing.
- a) A and B are true. C and D are false
 - b) A and C are true. B and D are false
 - c) A, B and C are true. D is false
 - d) B, C and D are true. A is false

19. Which ONE of the following statements about the given state transition diagram and table of test cases is TRUE?



Test Case	1	2	3	4	5
Start state	S1	S2	S2	S3	S3
Input	Power On	Power Off	RC On	RC Off	Power Off
Expected Output	TV Stand By	TV Off	TV Play	TV Stand By	TV Off
Finish state	S2	S1	S3	S2	S1

- a) The given test cases represent sequential pairs of transitions in the state transition diagram
- b) The given test cases can be used to derive both valid and invalid transitions in the state transition diagram
- c) The given test cases represent only some of the valid transitions in the state transition diagram
- d) The given test cases represent all possible valid transitions in the state transition diagram

20.	<p>Which of the following statements for the equivalence partitioning test technique are <u>TRUE</u>?</p> <p>A. It divides possible inputs into classes where all elements are expected to cause the same behavior</p> <p>B. It uses both valid and invalid partitions.</p> <p>C. It must include at least two values from every equivalence partition</p> <p>D. I can be used only for testing equivalence partitions inputs from a Graphical User Interface</p> <p>a) A, B, D are true; C is false b) A is true; B, C, D are false c) A, B are true; C, D are false d) B, C are true; A, D are false</p>
21.	<p>Which of the following techniques are categorized as Black-box design techniques?</p> <p>a) Equivalence Partitioning testing, Decision Table Testing, Statement Coverage, Use Case Testing</p> <p>b) Equivalence Partitioning Testing, Decision Coverage Testing, Use Case Testing</p> <p>c) Equivalence Partitioning Testing, Decision Coverage Testing, Boundary Value Analysis</p> <p>d) Equivalence Partitioning Testing, Decision Table Testing, State Transition Testing and Boundary Value Analysis</p>
22.	<p>An employee's bonus is to be calculated.</p> <p>It cannot be negative, but it can be calculated down to zero. The bonus is based on the length of employment. The categories are: less than or equal to 2 years, more than 2 years but less than 5 years, 5 to 10 years, or longer than 10 years. Depending on the length of employment, an employee will get different level of bonus.</p> <p>How many equivalence partitions are needed to test the calculation of the bonus?</p> <p>a) 2 b) 5 c) 3 d) 4</p>

23.	<p>Which of the following statements about the benefits of deriving test cases from use cases are true and which are false?</p> <p>A. Deriving test cases from use cases is helpful for system and acceptance testing B. Deriving test cases from use cases is helpful only for automated testing C. Deriving test cases from use cases is helpful for component testing D. Deriving test cases from use cases is helpful for integration testing</p> <p>a) A is true; B, C, D are false b) A, C, D are true; B is false c) A, D are true; B, C are false d) B, D are true; A, C are false</p>
24.	<p>Which <u>ONE</u> of the options below would be the BEST basis for testing using fault attacks?</p> <p>a) Expected results from comparison with an existing system b) Experience, defect and failure data, knowledge about software failures c) Use Cases derived from the business flows by domain experts d) Risk identification performed at the beginning of the project</p>
25.	<p>You are working on a project that has poor specifications and time pressure. Which ONE of the following test techniques would be the best test approach to use?</p> <p>a) Statement Testing b) Exploratory Testing c) Use Case Testing d) Decision Testing</p>
26.	<p>Which one of the following test techniques is a white-box technique?</p> <p>a) Equivalence Partitioning b) Boundary Value Analysis c) State Transition Testing d) Decision Testing</p>

27. You have started specification-based software testing.
The system under test calculates the greatest common divisor (GCD) of two integers (A and B) greater than zero.

calcGCD (A, B);

The following test cases (TC) have been specified.

TC	A	B
1	1	1
2	INT_MAX	INT_MAX
3	1	0
4	0	1
5	INT_MAX + 1	1
6	1	INT_MAX + 1

INT_MAX: largest Integer

Which test technique has been applied in order to determine test cases 1 through 6?

- a) Use Case Testing
- b) State Transition Testing
- c) Decision Table Testing
- d) Boundary Value Analysis

28. A company's employees are paid bonuses if they had worked more than a year in the company and achieved individual agreed targets.

The following decision table has been designed to test the system:

		T1	T2	T3	T4	T5	T6	T7	T8
Conditions									
Cond1	Employment for more than 1 year?	YES	NO	YES	NO	YES	NO	YES	NO
Cond2	Agreed target?	NO	NO	YES	YES	NO	NO	YES	YES
Cond3	Achieved target?	NO	NO	NO	NO	YES	YES	YES	YES
Action									
	Bonus payment?	NO	NO	NO	NO	NO	NO	YES	NO

Which test cases could be eliminated in the above decision table because the situation would not occur in a real situation?

- a) T3 and T4
- b) T5 and T6
- c) T7 and T8
- d) T1 and T2

29. Which ONE of the following BEST describes how tasks are divided between the test manager and the tester?

- a) The test manager plans and organizes the testing and specifies the test cases, while the tester prioritizes and executes the tests
- b) The test manager plans, organizes and controls the testing activities, while the tester specifies and executes tests
- c) The test manager plans, monitors and controls the testing activities, while the tester designs tests and decides about approval of the test object
- d) The test manager plans testing activities and chooses the standards to be followed, while the tester chooses the tools and controls to be used

30. Which ONE of the following can be categorized as product risks?

- a) Low quality of requirements, design, code and tests
- b) Error-prone areas, potential harm to the user and poor product characteristics
- c) Political problems and delays in especially complex areas in the product
- d) Problems in defining the right requirements and potential failure areas in the software or system

31.	<p>Which ONE of the following are typical test exit criteria from testing?</p> <ul style="list-style-type: none"> a) Test coverage measures, reliability measures, degree of tester independence and product completeness b) Test coverage measures, reliability measures, test cost, schedule, state of defect correction and residual risks c) Time to market, residual defects, tester qualification, degree of tester independence, thoroughness measures and test cost d) Test coverage measures, reliability measures, test cost, time to market and product completeness, availability of testable code
32.	<p>As a Test Manager you have the following requirements to test:</p> <p>Requirements to test: R1 - Process Anomalies R2- Synchronization R3- Confirmation R4 - Issues R5 - Financial Data R6 - Diagram Data R9 - Changes to the User Profile</p> <p>The notation to indicate any Requirement's logical dependencies, is, for example, "R1 ->R3", meaning that R3 is dependent on R1.</p> <pre> graph TD R1 --> R3 R1 --> R2 R2 --> R5 R2 --> R6 R5 --> R7 R6 --> R7 R7 --> R4 </pre> <p>Which ONE of the following options structures the test execution schedule according to the requirement dependencies?</p> <ul style="list-style-type: none"> a) R1 > R3 > R2 > R5 > R6 > R4 > R7 b) R2 > R5 > R6 > R4 > R7 > R1 > R3 c) R3 > R2 > R1 > R7 > R5 > R6 > R4 d) R1 > R2 > R5 > R6 > R3 > R4 > R7

33.	Which ONE of the following is a possible benefit of independent testing a) Independent testers tend to be unbiased and find different defects than the developers b) Independent testers do not need extra education and training c) More work gets done because testers do not disturb the developers all the time d) Independent testers reduce the bottleneck in the incident management process
34.	Which ONE of the following is a project risk? a) Failure-prone software delivered b) Poor software characteristics (e.g. usability) c) Skill and staff shortages d) Possible reliability defect (bug)
35.	As a test manager, you are asked for a test summary report. Concerning test activities what should be the <u>MOST</u> important information to include in your report? a) Overall evaluation of each development work item b) Training taken by members of the test team to support the test effort c) The number of test cases executed and their results d) An overview of the major testing activities, events and the status with respect to meeting goals
36.	You are a tester in a safety-critical software development project. During execution of a test, you find out that one of your test cases failed, causing you to write an incident report. What should you consider to be the most important information to include in your incident report? a) Unique ID for the report, special requirements needed and the person who caused the defect b) Transmitted items, your name and your feelings about the possible root cause of the defect c) Impact, incident description, date and your name d) Incident description, development environment and expected results of testing

<p>37.</p>	<p>From the list below, which are the recommended principles for introducing a test tool in an organization?</p> <ol style="list-style-type: none"> 1. Roll out the tool out to the entire organization at the same time. 2. Start with a pilot project. 3. Adapt and improve processes to fit the use of the tool. 4. Provide training and coaching for new users. 5. Let each team decide their own ways of using the tool. 6. Monitor that costs do not exceed initial acquisition cost. 7. Gather lessons learned from all teams. <p>a) 1, 6, 7 b) 2, 3, 4, 7 c) 1, 3, 4, 5 d) 2, 5, 6</p>
<p>38.</p>	<p>Which one of the following <u>BEST</u> describes a characteristic of a keyword-driven test execution tool?</p> <ol style="list-style-type: none"> a) Actions of testers are automated using a script that is run with several sets of test input data b) A table with test input data, action words, and expected results controls execution of the system under test c) Actions of testers are automated using a script that is rerun several times d) The ability to log test results and compare them against the expected results, stored in a text file
<p>39.</p>	<p>Which of the following is <u>NOT</u> a goal of a pilot project for tool evaluation?</p> <ol style="list-style-type: none"> a) To determine use, management, storage, and maintenance of the tool and testware b) To reduce the defect rate in the pilot project c) To evaluate how the tool fits with existing processes and practices d) To assess whether the benefits will be achieved at reasonable cost
<p>40.</p>	<p>A software development and test organization would like to achieve the test efficiency improvement goals listed below. Which ONE of these goals would best be supported by a test management tool?</p> <ol style="list-style-type: none"> a) Optimize the ability of tests to identify failures b) Enable traceability between requirements, tests, and defects (bugs) c) Automate a selection of test cases for execution d) Resolve defects faster

Please return this questionnaire and all your notes together with your answer sheet at the end of the examination.

Practice Exam