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

Foundation Level Exam in Software Testing

Version 4.0 Sample Exam D

Examination Questions
2024-04-17

Time allowed: 1:00
(For non-native English speakers: 1:15)

There are 40 questions.
Correct answer 1 point, wrong answer 0 point

Total 40 points; You need 26 points to pass (65%)

You must follow directives given to you by the proctor during the whole exam.

Mark your answers in the provided answer sheet. Try to answer all questions. Select one option per question if nothing else indicated. 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.	**Which of the following is a typical test objective?**
	a) Finding and fixing defects in the test object b) Maintaining effective communications with developers c) Validating that legal requirements have been met d) Building confidence in the quality of the test object Select **ONE** option.
2.	**A designer documents a design for a user interface that does not suitably address disabled users because the designer is tired.** The programmer implements the user interface in line with the design but as they are working under severe time pressure, they do not include suitable exception handling in their program code for bonus calculations. When the operational system is used, complaints are made by some disabled users about the interface and the company is subsequently fined by the relevant regulatory authority. No one notices that bonus calculations are sometimes incorrect. Which of the following statements is **CORRECT**? a) The miscalculation of bonuses is a defect that occasionally occurs b) The fine received for failing to address some disabled users is a failure c) The programmer working under severe time pressure is a root cause d) The design of the user interface includes a designer error Select **ONE** option.
3.	**High-level test conditions are being used by testers to generate test cases and execute tests.** Even though the test conditions remain the same, the test cases are varied each time. Which of the following 'principles of testing' is being addressed through the variation of test cases? a) Tests wear out b) Absence-of-defects fallacy c) Early testing saves time and money d) Defects cluster together Select **ONE** option.

4.	**Given the following test tasks:**
	    1. Derive test cases from test conditions
	    2. Identify reusable testware
	    3. Organize test cases into test procedures
	    4. Evaluate test basis and test object
	
	And the following test activities:
	    A. Test analysis
	    B. Test design
	    C. Test implementation
	    D. Test completion
	
	Which of the following **BEST** matches the tasks with the activities?
	
	a) 1B, 2A, 3D, 4C
	b) 1B, 2D, 3C, 4A
	c) 1C, 2A, 3B, 4D
	d) 1C, 2D, 3A, 4B
	
	Select **ONE** option.

5.	**Given the following testware:**
	    i. Test completion report
	    ii. Data held in a database used for test inputs and expected results
	    iii. The list of elements needed to build the test environment
	    iv. Documented sequences of test cases in execution order
	    v. Test cases
	
	Which of the following **BEST** shows the testware produced as a result of performing test implementation?
	
	a) ii, iv
	b) iii, v
	c) i, ii, v
	d) i, iii, iv
	
	Select **ONE** option.

6.	**Which of the following is MOST likely to describe a task performed by someone in a test management role?** a) Evaluate test basis and test object a) Define test environment requirements b) Assess testability of test object c) Create test completion report Select **ONE** option

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7.	**Which of the following is an advantage of the whole team approach?**
	a) Improved communication between team members b) Decreased individual accountability for quality c) Faster deployment of deliverables to the end users d) Reduced collaboration with external business users Select **ONE** option.

8.	**Given the following benefits and drawbacks of the independence of testing:**
	
	   i. The testers work in a different location from the developers
	   ii. Testers question the assumptions programmers make while writing code
	   iii. A confrontational dynamic has been established between testers and developers
	   iv. Developers have convinced themselves that testers are mostly accountable for quality
	   v. Testers have different biases than those held by the developers
	
	Which are **MOST** likely to be considered benefits?
	
	a) i, iv
	b) ii, v
	c) i, iii, iv
	d) ii, iii, v
	
	Select **ONE** option.

9.	**Which of the following is a good testing practice that applies to all software development lifecycles?** a) Each test level has specific and distinct test objectives b) Test implementation and execution for a given test level should start during the corresponding development phase c) Testers should start test design as soon as drafts of the relevant work products become available d) Every dynamic testing activity has a corresponding static testing activity Select **ONE** option.

10.	**Which of the following is an example of a test-first approach to development?**
	a) Behavior-Driven Development b) Test Level Driven Development c) Function-Driven Development d) Performance-Driven Development Select **ONE** option.
11.	**Which of the following is MOST likely to be a challenge encountered when implementing DevOps?**
	a) Making sure that non-functional quality characteristics are not overlooked b) Managing continuously changing test environments c) The need for more manual testers with suitable experience d) Setting up the test automation as part of the delivery pipeline Select **ONE** option.
12.	**Which of the following BEST describes retrospectives?**
	a) Retrospectives allow team members to identify other team members who did not fully contribute to achieving quality as required by the whole-team approach b) Retrospectives give testers an opportunity to identify activities that were successful so that these are retained when potential improvements are made in the future c) Retrospectives are where agile team members are allowed to voice their concerns about management and customers in a blame-free environment d) Retrospectives give agile team members a forum where they focus on discussing the plan and technical decisions for the next iteration Select **ONE** option.
13.	**Which of the following tests is MOST likely to be performed as part of functional testing?**
	a) The test checks that the sort function puts the elements of the list or array in ascending order b) The test checks whether the sort function completes sorting within one second of starting c) The test checks how easily the sort function can be changed from sorting ascending to sorting descending d) The test checks that the sort function still functions correctly when moved from a 32-bit to a 64-bit architecture Select **ONE** option.

14.	**Which of the following is MOST likely to be a trigger that leads to maintenance testing of a currency exchange system?**
	a) The developers reported that changing the currency exchange system was difficult and the testers decided to check if this was true
	b) The refund option of the currency exchange system was removed as it did not always repay the correct amount to customers
	c) The agile team has started developing a user story that adds a new customer loyalty feature to the currency exchange system
	d) The currency exchange system was reconfigured to support both English and local language currency transactions
	Select **ONE** option.
15.	**Which of the following CANNOT be examined by static testing?**
	a) Contract
	b) Test plan
	c) Encrypted code
	d) Test charter
	Select **ONE** option.
16.	**Which of the following statements about the value of static testing is CORRECT?**
	a) The defect types found by static testing are different from the defect types that can be found by dynamic testing
	b) Dynamic testing can detect the defect types that can be found by static testing plus some additional defect types
	c) Dynamic testing can identify some of the defects that can be found by static testing but not all of them
	d) Static testing can identify the defect types that can be found by dynamic testing as well as some extra defect types
	Select **ONE** option.

17.	**Given the following descriptions of review activities:**
	1. Detected anomalies are deliberated upon, and determinations are reached regarding their status, ownership, and any further steps needed
	2. Issues are recorded, and any needed updates are addressed prior to the acceptance of the work product
	3. Reviewers employ techniques to come up with suggestions and questions about the work product and to spot anomalies
	4. The objective of the review and its schedule are established to ensure a focused and efficient review
	5. Participants are provided with access to the item being reviewed
	Which of the following is the **CORRECT** sequence in the review process of the activities that correspond to the descriptions?
	a) 4 – 3 – 5 – 2 – 1
	b) 4 – 5 – 3 – 1 – 2
	c) 5 – 4 – 1 – 3 – 2
	d) 5 – 4 – 3 – 2 – 1
	Select **ONE** option.
18.	**Which participant in the review process is responsible for ensuring that the review meetings run effectively and that everyone at the meetings can voice their opinions freely?**
	a) Manager
	b) Moderator
	c) Chairperson
	d) Review Leader
	Select **ONE** option.
19.	**You perform system testing of an e-commerce web application and are provided with the following requirement:**
	REQ 05-017. If the total cost of purchases exceeds $100, the customer gets a 5% discount on subsequent purchases. Otherwise, the customer does not receive a discount.
	Which test techniques will be **MOST** helpful in designing test cases based on this requirement?
	a) White-box test techniques
	b) Black-box test techniques
	c) Experience-based test techniques
	d) Risk-based test techniques
	Select **ONE** option.

20.	The system for selling cinema tickets calculates the discount type based on the client's birth year (BY) and on the current year (CY) as follows: Let D be the difference between CY and BY, that is, $D = CY - BY$. - If $D < 0$ then print the error message "birth year cannot be greater than current year" - If $0 \leq D < 18$ then apply the student discount - If $18 \leq D < 65$ then apply no discount - If $D \geq 65$ then apply the pensioner discount Your test suite already contains two test cases: - BY = 1990, CY = 2020, expected result: no discount - BY = 2030, CY = 2029, expected result: print the error message Which **TWO** of the following test data sets should be added to achieve full valid equivalence partitioning coverage for the discount type? a) BY = 2001, CY = 2065 b) BY = 1900, CY = 1965 c) BY = 1965, CY = 1900 d) BY = 2011, CY = 2029 e) BY = 2000, CY = 2000 Select **TWO** options.
21.	**You are testing a temperature control system for a horticultural cold storage facility.** The system receives the temperature (in full degrees Celsius) as the input. If the temperature is between 0 and 2 degrees inclusive, the system displays the message "temperature OK". For lower temperatures, the system displays the message "temperature too low" and for higher temperatures it displays the message "temperature too high". Using two-value boundary value analysis, which of the following sets of test inputs provides the highest level of boundary value coverage? a) −1, 3 b) 0, 2 c) −1, 0, 2, 3 d) −2, 0, 2, 4 Select **ONE** option.

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| 22. | **You are designing test cases based on the following decision table.** |

	R1	R2	R3	R4	R5	R6	R7
C1: Age	0-18	19-65	19-65	>65	0-18	19-65	>65
C2: Experience	-	0-4	>4	-	-	-	-
C3: Registered?	NO	NO	NO	NO	YES	YES	YES
Category	A	A	B	B	B	D	C

So far you have designed the following test cases:
- TC1: 19-year-old, unregistered man with no experience;
  expected result: category A
- TC2: 65-year-old, unregistered woman with 5 years of experience;
  expected result: category B
- TC3: 66-year-old, registered man with no experience;
  expected result: category C
- TC4: 65-year-old, registered woman with 4 years of experience;
  expected result: category D

Which of the following test cases, when added to the existing set of test cases, will increase the decision table coverage?

a) 66-year-old, unregistered man with no experience;   expected result: category B

b) 55-year-old, unregistered woman with 2 years of experience; expected result: category A

c) 19-year-old, registered woman with 5 years of experience;   expected result: category D

d) No additional test case can increase the already achieved decision table coverage

Select **ONE** option.

23.	You are applying state transition testing to the hotel room reservation system modeled by the following state transition table, with 4 states and 5 different events:

	Events				
State	Available	NotAvailable	ChangeRoom	Cancel	Pay
S1: Requesting	S2	S3			
S2: Confirmed			S1	S4	S4
S3: Waiting list	S2			S4	
S4: End					

Assuming all test cases start in the 'Requesting' state, which of the following test cases, represented as sequences of events, achieves the highest valid transitions coverage?

a) NotAvailable, Available, ChangeRoom, NotAvailable, Cancel
b) Available, ChangeRoom, NotAvailable, Available, Pay
c) Available, ChangeRoom, Available, ChangeRoom, NotAvailable
d) NotAvailable, Cancel, ChangeRoom, Available, Pay

Select **ONE** option.

24.	**Your test suite S for a program P achieves 100% statement coverage.** It consists of three test cases, each of which achieves 50% statement coverage.

Which of the following statements is **CORRECT**?

a) Executing S will cause all possible failures in P
b) S achieves 100% branch coverage for P
c) Every executable statement in P containing a defect has been run at least once during the execution of S
d) After removing one test case from S, the remaining two test cases will still achieve 100% statement coverage

Select **ONE** option.

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25.	**Why does white-box testing facilitate defect detection even when the software specification is vague, outdated, or incomplete?**
	a) Test cases are designed based on the structure of the test object rather than the specification
	b) For each white-box test technique the coverage can be well-defined and easily measured
	c) White-box test techniques are very well designed to detect omissions in the requirements
	d) White-box test techniques can be used in both static testing and dynamic testing
	Select **ONE** option.
26.	**Which of the following is __NOT__ anticipated by the tester while applying error guessing?**
	a) The developer misunderstood the formula in the user story for calculating the interest
	b) The developer wrote "FA = A*(1+IR^N)" instead of "FA = A*(1+IR)^N" in the source code
	c) The developer missed the seminar on new compound interest rate legislation
	d) The accuracy of the interest calculated by the system is not precise enough
	Select **ONE** option.
27.	**Which of the following is true about exploratory testing?**
	a) Test cases are designed before the exploratory testing session starts
	b) The tester can perform test execution, but cannot perform test design
	c) Exploratory testing results are good predictors of the number of remaining defects
	d) During exploratory testing the tester may use black-box test techniques
	Select **ONE** option.

28.	Which collaborative user story writing practice enables the team to achieve a collective understanding of what needs to be delivered?
	a) Planning poker, so that a team can achieve consensus on the effort needed to implement a user story
	b) Reviews, so that a team can detect inconsistencies and contradictions in a user story
	c) Iteration planning, so that user stories with the highest business value for a customer can be prioritized for implementation
	d) Conversation, so that team members can understand how the software will be used
	Select **ONE** option.
29.	**You have just started designing test cases for the following user story.**
	As a customer, I want to be able to filter search results by price range, so that I can find products within my budget more easily. Acceptance criteria: 1. The filter should work for all versions of the application from version 3.0 upwards 2. The filter should allow the customer to set a price range with a minimum and a maximum price 3. The search results should update dynamically as the customer adjusts the price range filter
	In all test cases the precondition is as follows: there are only two products available, products A and B. Product A costs $100 and product B costs $110.
	Which of the following is the **BEST** example of a test case for this user story?
	a) Enter webpage and set filter to show prices between $90 and $100. Expected result: results show product A only. Set maximum price to $110. Expected result: results now include both products A and B
	b) Enter webpage. Expected result: the default minimum and maximum prices are $100 and $110 respectively. Add product C to stock, with price $120. Refresh the client's webpage. Expected result: the default maximum price changes to $120
	c) Enter webpage and set filter to show prices between $90 and $115. Expected result: results show both products A and B. Change currency from USD to EUR. Expected result: the filter range changes correctly to EUR values, according to the current exchange rate
	d) Enter webpage with three different browsers: Edge, Chrome, and Opera. In each browser set filter between $90 and $110. Expected result: results include both products A and B and the results layout is the same in all three browsers
	Select **ONE** option.

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30.	**Which TWO of the following BEST define EXIT criteria in a testing project?** a) The budget is approved b) Budget runs out c) Test basis is available d) Test cases achieved at least 80% statement coverage e) All test analysts are ISTQB certified at the Foundation Level Select **TWO** options.
31.	**The team wants to estimate the time needed for one tester to execute four test cases for a software component.** The team has gathered the following measures of the effort used to execute a single test case: - Best-case scenario: 1 hour - Worst-case scenario: 8 hours - Most likely scenario: 3 hours Given that the three-point estimation technique is being used, what is the final estimate of the time needed to execute all four test cases? a) 14 hours b) 3.5 hours c) 16 hours d) 12 hours Select **ONE** option.

Sample Exam D

32.	**The table shows the traceability matrix from test cases to requirements.**

"X" means that a given test case covers the corresponding requirement.

	Req1	Req2	Req3	Req4	Req5	Req6	Req7
TC1	X		X	X			X
TC2	X				X		X
TC3					X	X	
TC4		X					

You want to prioritize the test cases following the additional coverage prioritization technique.
You execute all four test cases.

Which test case should be executed as the **LAST** one?

a) TC1
b) TC2
c) TC3
d) TC4

Select **ONE** option.

33.	**How can the testing quadrants be beneficial for testing?**

a) They help in test planning by dividing the test process into four stages, corresponding to the four basic test levels: component, integration, system, and acceptance testing
b) They help in assessing the high-level coverage (e.g., requirements coverage) based on low-level coverage (e.g., code coverage)
c) They help non-technical stakeholders to understand the different types of tests and that some test types are more relevant to certain test levels than others
d) They help agile teams to develop a communication strategy based on classifying people according to four basic psychological types, and on modelling the relations between them

Select **ONE** option.

34.	**For a given risk, its risk level is $1,000 and its risk likelihood is estimated as 50%.**
	What is the risk impact?
	a) $500
	b) $2,000
	c) $50,000
	d) $200
	Select **ONE** option.
35.	**Which TWO of the following are product risks?**
	a) Scope creep
	b) Poor architecture
	c) Cost-cutting
	d) Poor tool support
	e) Response time too long
	Select **TWO** options.
36.	**Which of the following is <u>NOT</u> a valid purpose for a test report?**
	a) Tracking test progress and identifying areas that require further attention.
	b) Providing information on the tests executed, their results, and any issues or defects found
	c) Providing information about each defect, such as the steps to reproduce it.
	d) Providing information on testing planned for the next period
	Select **ONE** option.
37.	**The user reported a software failure.**
	An engineer from the support team asked the user for the software version number where the failure was observed. Based on the version number, the team reassembled all the files that made up the release. This later allowed a developer to perform analysis, find the defect, and fix it.
	Which of the following enabled the above activity to be performed by the team?
	a) Risk management
	b) Test monitoring and control
	c) Whole-team approach
	d) Configuration management
	Select **ONE** option.

Sample Exam D

38.	**Consider the following defect report for a Book Lending System.**

Defect ID: 001 | **Title**: Unable to Return a Book | **Severity**: High | **Priority**:
Environment: Windows 10, Google Chrome

Description: When attempting to return a book using the Book Return feature, the system does not register the return and the book remains checked out to the user.

Steps to Reproduce:
Login to the Book Lending System as a user who has checked out a book.
Click on the "Book Return" button for the book that has been checked out.
System does not register the return and the book remains checked out.

Expected Result: The book should be returned and no longer appear as checked out to the user.

Actual Result: The book remains checked out to the user and is not registered as returned in the system.

Attachments: [empty list]

Which of the following is MOST likely to help the developer reproduce the failure quickly?

a) Adding information about which users and which books the issue affects to the "Description" section
b) Filling in the missing value for the "Priority" field
c) Adding memory dumps and database snapshots taken after each step described in the "Steps to Reproduce" section to the "Attachments" section.
d) Repeating the same test case for different environments and writing defect reports for each of them separately

Select **ONE** option.

39.	**Given the following test tool categories:**
	i. Collaboration tools
	ii. DevOps tools
	iii. Management tools
	iv. Non-functional testing tools
	v. Test design and implementation tools
	Tools from which of the categories are **MOST** likely to facilitate test execution?
	a) i, v
	b) ii, iv
	c) i, iii, v
	d) ii, iii, iv
	Select **ONE** option.
40.	**Which of the following is MOST likely to be a risk of test automation?**
	a) The detection of additional high-severity defects
	b) Providing measures that are too complicated for humans to derive
	c) Incompatibility with the development platform
	d) Substantially reduced test execution times
	Select **ONE** option.

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