Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam – Questions

ISTQB®

International
Software Testing
Qualifications Board

Sample Exam:
Questions

ISTQB® Technical Test Analyst Syllabus

Advanced Level

Exam ID: A

Version 2019 1.0

International Software Testing Qualifications Board

Legal

Document Responsibility

The ISTQB® Examination Working Group is responsible for this document.

Acknowledgements

.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Revision History

Version	Date	Remarks
1.0	(Not released)	A sample exam for the 2012 syllabus was not created.
Version 2019 V1.0	December 2019	Revisions made by AELWG to enable launch Added appendix to include LOs not covered in the sample exam.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Table of Contents

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Introduction

The sample questions and answer sets in this document have been created by a team of subject matter experts and experienced question writers with the aim of assisting ISTQB® Member Boards and Exam Boards in their question writing activities.

These questions cannot be used as-is in any official examination, but they should serve as guidance for question writers. Given the wide variety of formats and subjects, these sample questions should offer many ideas for the individual Member Boards on how to create good questions and appropriate answer sets for their examinations.

The questions are organized in the following way:

- Question number
- Assigned points
- Question

The answers and justifications to the questions are contained in a separate document.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Questions

Question #1 (1 Point)

Which of the following are generic risk factors that should be considered by the Technical Test Analyst?

    a) Large number of defects found with the reliability of the software.
    b) Technology factors such as complexity and availability of tools.
    c) Availability of documentation from legacy systems to be used to verify the accuracy of computations.
    d) Budgetary restrictions on the project.
    e) High change rates of the business use cases.

Select TWO options.

Question #2 (1 Point)

When participating in a risk analysis, the Technical Test Analyst is expected to work closely with which of the following sets of people?

    a) Users
    b) Business analysts
    c) Project sponsors
    d) Developers

Select ONE option.

Question #3 (2 Points)

Consider the simplified logic of a tea-making machine:

Switch on machine

IF suffcent water THEN

        Boil water

        Add tea

        Show message "milk?"

        IF milk = yes THEN

            Show message "low fat?"

            IF low fat = yes THEN

                Add low fat milk

            ELSE

                Add normal milk

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

```
            ENDIF
        ENDIF
        Show message "sugar?"
        IF sugar = yes THEN
                Add sugar
        ENDIF
        Stir
        Wait 3 minutes
        Show message "please take your tea"
ELSE
        Show message "please fill up water"
ENDIF
```

How many test cases would you design to achieve 100% statement coverage for the tea-making machine?

a) 3
b) 2
c) 5
d) 6

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #4 (2 Points)

The simplified logic of a program has been specified as follows:

Statement P

IF A THEN

      IF B THEN

            Statement Q

      ELSE

            Statement R

      ENDIF

ELSE

      Statement S

      IF C THEN

            Statement T

      ELSE

            Statement U

      ENDIF

ENDIF

Statement V

How many test cases would you design to achieve 100% decision coverage?

    a) 2
    b) 3
    c) 4
    d) 5

Select ONE option

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #5 (2 Points)

You are testing a photo-enforcement system for traffic control in an intersection. It has been determined that a photo should be taken if the signal light is red (RED) or the car is speeding (SPEED) and if the front wheels of the car are over the line marking the beginning of the intersection (WHEELS).

Consider these sets of test values:

1. RED + SPEED + WHEELS
2. RED + SPEED + not WHEELS
3. RED + not SPEED + WHEELS
4. RED + not SPEED + not WHEELS
5. not RED + SPEED + WHEELS
6. not RED + SPEED + not WHEELS
7. not RED + not SPEED + WHEELS
8. not RED + not SPEED + not WHEELS

Assume the logic in the code is as follows:

```
IF ((RED OR SPEED) AND WHEELS) THEN
        TAKE THE PHOTO
ELSE
        DO NOT TAKE THE PHOTO
```

Given this information, which sets of values provides the minimum tests to achieve 100% modified condition/decision coverage?

a) 1, 3, and 8.
b) 2 and 8.
c) 3, 4, 5, and 7.
d) 1, 5, 7, and 8.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #6 (2 Points)

You are testing a photo-enforcement system for traffic control in an intersection. The requirements state a photo shall be taken if the signal light is red (RED) or the car is speeding (SPEED) and if the front wheels of the car are over the line marking the beginning of the intersection (WHEELS).

Consider these sets of values:

1. RED + SPEED + WHEELS
2. RED + SPEED + not WHEELS
3. RED + not SPEED + WHEELS
4. RED + not SPEED + not WHEELS
5. not RED + SPEED + WHEELS
6. not RED + SPEED + not WHEELS
7. not RED + not SPEED + WHEELS
8. not RED + not SPEED + not WHEELS

Assume the logic in the code is as follows:
> If ((RED or SPEED) and WHEELS) then
>> Take the photo
> Else
>> Do not take the photo

Given this information, which sets of values provide the minimum tests to achieve 100% multiple condition coverage?

a) All the sets are needed.
b) 3, 4, 5, and 7.
c) 1, 3, and 8.
d) 1, 5, 7, and 8.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #7 (2 Points)

You are testing a photo-enforcement system for traffic control in an intersection. The requirements state that a photo shall be taken if the signal light is red (RED) or the car is speeding (SPEED) and if the front wheels of the car are over the line marking the beginning of the intersection (WHEELS).

Consider these sets of values:

1. RED + SPEED + WHEELS
2. RED + SPEED + not WHEELS
3. RED + not SPEED + WHEELS
4. RED + not SPEED + not WHEELS
5. not RED + SPEED + WHEELS
6. not RED + SPEED + not WHEELS
7. not RED + not SPEED + WHEELS
8. not RED + not SPEED + not WHEELS

Assume the logic in the code is as follows:
    If ((RED or SPEED) and WHEELS) then
        Take the photo
    Else
        Do not take the photo

Given this information, which sets of values provide the minimum tests to achieve full coverage of basis paths.

a) 3, 4, 5, 7
b) 2, 3
c) 1, 3, 8
d) 1

Select ONE option.

Question #8 (1 Point)

Which of the following types of defects are targeted by API testing?

a) Loss of transactions.
b) Non-conformance to coding standards.
c) Incorrect data handling.
d) Installation defects.
e) GUI faults.

Select TWO options.

Question #9 (3 Points)

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

ISTQB®

You are the Technical Test Analyst working on the testing of software that will control the movement of a roof on a new national sports stadium that seats 100,000 spectators. A failure analysis has shown that if the software system fails then it may cause the roof to break up and fall on the spectators. The government has requested that the level of testing for this software exceeds that that required by standard ISO 61508.

Which is the level of test coverage you would expect to be achieved in the testing of the control software for the stadium roof?

a) Decision coverage + Modified Condition/Decision coverage.
b) Decision coverage + Statement coverage.
c) Modified Condition/Decision coverage.
d) Multiple Condition coverage.

Select ONE option.

Question #10 (3 Points)

You are advising the developers in an agile team on the appropriate test coverage to be achieved in the next sprint. Three business-critical user stories are on the sprint backlog. Each user story requires that several seqential actions are performed with some simple error handling routines.

Which is the level of test coverage you would expect to be achieved in the testing of the user stories?

a) Decision coverage + Modified Condition/Decision coverage.
b) Decision coverage + Statement coverage.
c) Modified Condition/Decision coverage.
d) Multiple Condition coverage.

Select ONE option.

Question #11 (2 Points)

Below is the pseudo-code for a TRICKY program:

```
0       program TRICKY
1       var1, var2, var3 : integer
2       begin
3               read ( var2 )
4               read ( var1 )
5               while var2 < 10 loop
6                       var3 = var2 + var1
7                       var2 = 4
8                       var1 = var2 + 1
9                       print ( var3 )
10                      if var1 = 5 then
```

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

ISTQB®

```
11                              print ( var1 )
12                  else
13                              print ( var1+1 )
14                  endif
15                  var2 = var2 + 1
16              endloop
17              write ( "Wow – that was tricky!" )
18              write ( "But the answer is…" )
19              write ( var2+var1 )
20      end program TRICKY
```

Which of the following statements about the TRICKY program MOST correctly describes any control flow anomalies in it?

a) The TRICKY program contains no control flow anomalies.
b) The TRICKY program contains unreachable code and an infinite loop.
c) The TRICKY program contains unreachable code.
d) The TRICKY program contains a loop with multiple entry points.

Select ONE option.

Question #12 (2 Points)

Below is the pseudo-code for an EASY program:

```
0       program EASY
1       var1, var2, var3 : integer
2       easy: boolean
2       begin
3               read ( var2 )
4               read ( var1 )
5               read (easy)
6               If (easy = true) then
7                       var3 = var2 + var1
8                       print ( var3 )
9                       if var1 = 5 then
10                              print ( var1 )
11                      else
12                              print ( var1+1 )
13                      endif
14                      var2 = var2 + 1
15              else
16                      var2 = 0
17                      write ( "Wow – that was tricky!" )
18              endif
19      write ( var2 )
```

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

ISTQB®

```
20      end program EASY
```

What is the cyclomatic complexity for the program?

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

Select ONE option.

Question #13 (1 Point)

Below is the pseudo-code for a program that calculates and prints sales commissions:

```
0       program Calculate Commission
1       total, number : integer
2       commission_hi, commission_lo : real
3       begin
4              read ( number )
5              while number ≠ -1 loop
6                     total = total + number
7                     read ( number )
8              endloop
9              if total > 1000 then
10                    commission_hi = 100 + 0.2 * ( total – 1000 )
11             else
12                    commission_lo = 0.15 * total
13             endif
14             write ( "This salesman's commission is:")
15             write ( commission_hi )
16      end program Calculate Commission
```

The code contains data flow anomalies on lines 6 and 12 (highlighted text).

Which examples of data flow anomalies are to be found on these lines?

    a) line 6: variable "total" is not assigned a value before using it
        line 12: variable "commission_lo" is defined but subsequently not used
    b) line 6: an invalid value is assigned to variable "total"
        line 12: variable "commission_lo" is redefined before it is used
    c) line 6: variable "total" is out of scope
        line 12: the "hard-coded" value "0.15" should not be used
    d) line 6: the variable "number" is undefined
        line 12: the variable "total" is redefined before it is used

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

ISTQB

International
Software Testing
Qualifications Board

Question #14 (2 Points)

You have been provided with the following system-wide average measures for the four systems, W, X, Y and Z.

System	W	X	Y	Z
Cyclomatic Complexity (CC)	23	8	12	7
Cohesion (CH)	High	Medium	Low	High
Coupling (CP)	Low	High	Medium	Medium
Commented Code (CO)	60%	10%	45%	8%
Repeated code instances (RE)	9	2	3	12

Budget is available to improve the maintainability of the code in each of the four systems by applying the results of static analysis to the individual components.

Which of the following is the BEST application of static analysis if only two measures per system can be resourced?

a) W – CO, RE   X – CC, CH   Y – CP, CO   Z – CC, RE
b) W – CC, CP   X – CH, CO   Y – CC, CH   Z – CO, RE
c) W – CC, RE   X – CP, CO   Y – CC, CH   Z – CO, RE
d) W – CH, CO   X – CC, RE   Y – CP, RE   Z – CC, CH

Select ONE option.

Question #15 (2 Points)

Below is the pseudo-code for a TRICKY program:

```
0       program TRICKY
1       var1, var2, var3 : integer
2       begin
3               read ( var2 )
4               read ( var1 )
5               while var2 < 10 loop
6                       var3 = var2 + var1
7                       var2 = 4
8                       var1 = var2 + 1
9                       print ( var3 )
10                      if var1 = 5 then
11                              print ( var1 )
12                      else
13                              print ( var1+1 )
14                      endif
15                      var2 = var2 + 1
16              endloop
```

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

17	write ("Wow – that was tricky!")
18	write ("But the answer is…")
19	write (var2+var1)
20	end program TRICKY

In which areas could the use of static analysis best improve the maintainability of the program?

a) Restructuring the code
b) Improving the naming of variables
c) Reduce program coupling
d) Improving the amount of comments
e) Improving the indentation of code

Select TWO options.

a) .

Question #16 (1 Point)

Which of the following is a way to use call graphs to determine integration testing requirements?

a) Establishing the number of locations within the software from where a method or function is called.
b) Establishing the number of locations within the software from where a module or system is called.
c) Determining conditional and unconditional calls for performance analysis.
d) Detecting areas to be targeted for possible memory leaks.

Select ONE option.

Question #17 (2 Points)

You are the Technical Test Analyst working on a project developing a new Ambulance Dispatch System (ADS). This ADS assists operators in taking calls about incidents, identifying available ambulances and mobilizing ambulances to handle the incidents. You know that the ADS was designed using an object-oriented approach and implemented using a language with automated garbage collection. During system and acceptance testing the system has been perceived to be generally performing correctly, but also rather slowly, and it has also occasionally 'crashed'; the subsequent (brief) investigations were inconclusive.

Which of the following statements would BEST justify the use of dynamic analysis in this situation?

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

a) Dynamic analysis could be used to measure response times for various functions to subsequently allow system tuning.
b) Dynamic analysis could be used to generate call graphs of the system to allow targeted performance enhancement.
c) Dynamic analysis could identify memory access violations caused by a wild pointer that result in the occasional 'crashes'.
d) Dynamic analysis could be used to determine if defects introduced by programmers failing to release allocated memory are causing the 'crashes'.

Select ONE option.

Question #18 (3 Points)

Assume you are working as a technical test analyst on a project where a new banking system is being developed. This system will store customer financial data, including personally identifying information, account numbers and balances, and transaction history.

Based on this information, which of the following topics are you most likely to need to contribute to the test plan?

a) Test data anonymization.
b) Coordination of distributed components.
c) Testing data encryption.
d) Testing in production.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #19 (3 Points)

Assume you are working as a technical test analyst on the system integration testing of the baggage handling system for a major airport. Most of the system components are developed by a main contractor, but the system componerts for baggage redirection and for handling outsized items are being developed off-shore by separate organizations. The airport operator is the customer for the project and has indicated that the system must run fast even under peak morning and evening loads. A fully representative test environment has been made available for the system integration tests and a specialist tools team has been set up to support the functional and non-functional testing. Some of the functional tests for the continuous integration have already been implemented but progress is slow.

Based on this information, which of the following topics are you most likely to identify as risks in the system integration test plan?

- a) Stakeholder requirements
- b) Required tool acquisition and training
- c) Test environment requirements
- d) Organizational considerations
- e) Data security considerations

Select TWO options.

Question #20 (2 Points)

Consider the following product risk: Abnormal application termination due to network connection failure

Which of the following is the appropriate test type to address this risk?

- a) Reliability testing.
- b) Performance testing.
- c) Operability testing.
- d) Portability testing.

Select ONE option.

Question #21 (2 Points)

Consider the following product risk: "A different database is to be used in the future".

Which of the following is the appropriate test type to address this risk?

- a) Adaptability testing
- b) Replaceability testing.
- c) Capacity testing.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

d) Co-existence testing

Select ONE option.

Question #22 (1 Point)

Which of the following statements is NOT correct?

a) It is desirable to conduct initial performance efficiency tests as early as possible, even if a production-like environment is not yet available
b) Availability testing is performed both before and after entering operational service
c) Because security issues can be introduced during the architecture, design and implementation of the system, security testing should happen after functional testing is done
d) Maintainability can be evaluated early in the lifecycle without having to wait for a completed and running system.

Select ONE option.

Question #23 (1 Point)

Which of the following statements is correct?

a) Reliability tests are commonly done as part of system testing.
b) Co-existence testing is normally performed after module testing has been completed.
c) Adaptability tests may be performed in conjunction with security tests.
d) Replaceability tests may only be performed once the overall system and potential replaceable components are available.

Select ONE option.

Question #24 (2 Points)

Scenario 1.

Assume that you are working for a start-up company with big ambitions but a limited initial funding. They are creating a system that will provide customized loyalty and rewards programs for small- and medium-sized businesses selling to customers on the web. These companies enroll themselves on the system's web store. This allows the companies to create customized buttons, to be placed on their websites, that let customers enroll in the companies' loyalty and rewards program. Each subsequent purchase earns points, and both companies and their customers can manage the program; for example, companies can determine the number of points required for customers to receive a free product or service, and customers can monitor their points.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Your employer's marketing staff is heavily promoting the system, offering aggressive discounts on the first year's fees to sign up new companies. The marketing materials state that the service will be highly reliable and extremely fast for companies and their customers.

At this time, the requirements are complete, and development of the software has just begun. The current schedule will allow companies and their customers to enroll starting in three months.

Your employer intends to use cloud computing resources to host this service, and to have no hardware resources other than ordinary office computers for its developers, testers, and other engineers and managers. Industry-standard web-based application software components will be used to build the system.

Consider scenario 1. Assume that you are executing security tests against the system

Which of the following types of defects would you expect to find during this testing?

- a) System clears screen too quickly after login.
- b) System removes user temporary files after logout.
- c) System allows unauthorized access to data.
- d) System allows access from unsupported browser.

Select ONE option.

Question #25 (2 Points)

Scenario 2.

The system integration tests for a new version of a stocks trading system are being planned. You are planning the performance efficiency tests for the new version of the system.

The system has so far received a positive response and the number of users has steadily increased. It enables users to trade individual stocks with a simple transaction consisting only of the user identity, stock number, quantity and action (buy or sell).

The system's response time to user inputs is regularly monitored by conducting performance tests supported by a tool and using a fully representative test environment. At present the system runs reliably and response times to user trading transactions are just below the maximum specified.

The marketing department anticipates that with the new functionality being introduced in the next release, the number of users is expected to double over the next 12 months. You have included scalability tests into your performance testing strategy.

Consider scenario 2. When planning the performance tests, which of the following types of defects would you target in the system integration test plan as being the most likely to occur?

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

a) The increase in the number of virtual users to be simulated by the tool will result in data volumes which exceed the available bandwidth of the test environment.
b) The system fails to meet future response time requirements for the anticipated numbers of users.
c) Required disk capacity exceeds the resources available.
d) The system actually fails.

Select ONE option.

Question #26 (1 Point)

A new personal banking system is to be developed for use on mobile devices. Which of the following reasons which would justifying including security testing in the test approach

a) To ensure the product can be effectively and efficiently modified without introducing defects
b) To ensure that the software does not exhibit unintended side-effects when performing its intended function
c) To evaluate whether the application installs correctly on a mobile device
d) To check that available functions are correctly implemented
e) To ensure that no sensitive data can be copied

Select TWO options.

Question #27 (1 Point)

Which of the following factors must be considered when planning reliability tests:

a) Ability to simulate hardware and operating system faults
b) Monitoring resources used
c) Establishing reliability vulnerabilities
d) Determining the peak loads for the system

Select ONE option.

Question #28 (1 Point)

A web-based holiday booking system expects to handle three times its average number of visitors during the peak booking month of the year. Choose TWO of the following reasons which would justify having performance testing in the test approach.

a) The web servers may be unable to handle the maximum number of transactions.
b) Business analysts are available for generating the expected peak load.
c) Functional tests can be re-used for performance testing.
d) The response time to holiday enquiries may be unacceptable for users.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

e) Skills in using performance testing tools are available.

Select TWO options.

Question #29 (1 Point)

A commercial point of sales (POS) system is being developed which is intended to be the first of several similar product developments. Which of the following maintainability characteristics should be given priority in the test approach?

- a) Analyzability
- b) Modifiability
- c) Modularity
- d) Reusability

Select ONE option.

Question #30 (1 Point)

A new business application is being developed for deployment on a Windows-based platform. If the application is successful there are plans for deployment to other platforms. Which of the following quality characteristics should be given priority in the test approach?

- a) Installability
- b) Adaptability
- c) Replaceability
- d) Co-existence

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

ISTQB®

Question #31 (1 Point)

A technical test analyst has been invited to the review of an architectural design specification. The review has been called at short notice for the following day and although there is nothing in the analyst's diary for that time, there is no time to prepare.

Which of the following would be the most appropriate response to the invitation?

a) I am free at that time and I will be pleased to attend.
b) I do not have time to prepare but I will attend rather than cause a delay.
c) I will not have enough time to prepare for a review meeting tomorrow, so I must decline unless the review can be postponed.
d) I cannot attend the review because I am unfamiliar with the specification.

Select ONE option.

Question #32 (3 Points)

You have been participating in an architectural review of a new product design. This is an embedded product that has severe memory restrictions. Consider the following lists of programming practices and problems that can result from using those practices.

Programming Practices:

Connection pooling

1. Data caching
2. Lazy instantiation
3. Transaction concurrency

Problems:

A. Performance impact when the instantiation is needed
B. Transaction loss due to processor unavailability
C. Errors in multi-threading logic
D. Stale data

Which of the above is a programming practice that can be used to reduce unnecessary memory use in this scenario and what are the possible problems in using this practice?

a) Practice 2, Problem D
b) Practice 4, Problem C
c) Practice 3, Problem A
d) Practice 1, Problem B

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #33 (3 Points)

You have been participating in an architectural design review of a new product design. This is a web-based currency trading product that provides real-time information of prices for currencies selected by the user.

The following list of practices are mentioned in the design as options for ensuring response times of less than 1 second and real-time data accuracy under maximum expected loads.

Which of the following practices would you highlight as most promising for achieving the requirement?

    a) Load balancing
    b) Data caching
    c) Object orientation
    d) Data replication

Select ONE option.

Question #34 (3 Points)

You are participating in a code review and have noticed a problem in the following section of pseudo-code (assume *** indicates a comment).

```
*** this code checks for valid card type ***
If credit card is type "Discover" then
        Display error message 437
Else if credit card is type "Visa" or "MasterCard" then
        Process purchase
Else if credit card is type "AmericanExpress" then
        Display error message 439
Else
        Display error message 440
End if
```

Which of the following problems is demonstrated in this section of the code and why should it be corrected?

    a) The comment in the code is incorrect, resulting in a maintainability impact.
    b) An external library should be used to validate the credit card, resulting in inefficiency by not re-using existing components.
    c) The most likely case is not tested first, resulting in a potential performance impact.
    d) There is no default clause, resulting in potential cases not being handled.

Select ONE option.

Question #35 (3 Points)

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

ISTQB

International
Software Testing
Qualifications Board

You are participating in a code review and have noticed a problem in the following section of pseudo-code (assume *** indicates a comment).

```
*** this pseudo-code calculates the average sales per month achieved by an organization ***
0          program SALES
1          month_counter, sales_in_month, total_sales, fileID,: integer
2          average_sales: float
3          begin
4                  *** open the sales file***
5                  fileID = open file ( "Sales" )
6                  If (fileID = 0) then
7                          *** File cannot be opened***
8                          Display error message 333
9                  Else
10                         *** get the number of months you want to consider
11                         Read (number_of_months)
12                         month_counter = 1
13                         while month_counter <= number_of_months loop
14                                 *** get sales for month from sales file using the GetSales function***
15                                 sales_in_month = GetSales (month_counter, FileID)
16                                 *** add the sales to the total***
17                                 total_sales = total_sales + sales_in_month
18                                 month_counter = month_counter + 1
19                         endloop
20                         *** calculate the average monthly sales and output that value***
21                         average_sales = total_sales / number_of_months
22                         Write (average_sales)
23                 Endif
24         end program SALES
```

Which of the following problems is demonstrated in this section of the code ?

a) Files are not checked for existence before attempting to access
b) Divisors are not tested for zero
c) Comments are inconsistent with the code
d) There are unused variables

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #36 (1 Point)

Which of the following are typical activities performed by a Technical Test Analyst when setting up a test automation project?

    a) Designing the test data for the automated test cases.
    b) Scheduling the test automation project and allocating time for maintenance with the test manager.
    c) Tools read test cases written with keywords and create the appropriate scripts for execution.
    d) Determining who will be responsible for the test analysis and design of test cases to be automated.
    e) Defining the interface requirements between the project's test management tool and the test automation tool.

Select TWO options.

Question #37 (1 Point)

Which of the following statements best captures the difference between data-driven and keyword-driven test automation?

    a) Keyword-driven test automation extends data-driven automation by defining keywords corresponding to business processes.
    b) Data-driven test automation extends keyword-driven automation by defining data corresponding to business processes.
    c) Data-driven test automation is more maintainable than keyword-driven test automation.
    d) Keyword-driven test automation is easier to develop than data-driven test automation.

Select ONE option.

Question #38 (1 Point)

Which of the following describes a common technical issue that causes automation projects to fail to achieve the planned return on investment?

    a) Elimination of duplication of information across tools.
    b) Removal of manual checking of data exchanges between tools.
    c) Use of an integrated development environment to simplify integration between tools.
    d) Lack of separation between code and changeable data in the testware.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #39 (1 Point)

Scenario 3.

Assume that you are involved in testing a mature application. This application is an online dating service that allows users: to enter a profile of themselves; to meet orientation-appropriate people who would be a good match for them; to arrange social events with those people; and, to block people they don't want to contact them.

Defects and test cases are managed in an existing commercial test management tool, which is working well. Source code and other project work products are stored in an open source configuration management system.

Your manager directs you to help her select a test execution automation tool to automate most of the regression testing.

Consider scenario 3. Assume you are using a keyword-driven automation approach. Which of the options would be the MOST LIKELY keywords for this application?

    a) Enter_Test_Data
    b) Remove_Test_Data
    c) Enter_profile
    d) Find_Match
    e) Pay_Bill

Select TWO options.

Question #40 (1 Point)

Which of the following statements about fault seeding tools is correct?

    a) These tools insert defects into the source code to test the input checking capabilities of the software.
    b) These tools insert defects into the source code to check the level of fault tolerance of the software.
    c) These tools insert defects into the source code to test the effectiveness of the test suite.
    d) These tools are generally used by the developer.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #41 (1 Point)

Which of the following statements about performance testing and monitoring tools is correct?

a) These tools drive the application at the communications protocol level rather than through its user interface to more accurately measure response times.
b) These tools generate a load by simulating a large number of virtual users following their designated operational profiles to generate specific volumes of input data.
c) These tools capture a script from an individual user interaction and multiple identical copies of the script are then replayed in parallel to represent the full range of possible users.
d) These tools take a wide range of measurements after test execution to enable the analysis of the most significant performance characteristics of the test object.

Select ONE option.

Question #42 (1 Point)

Which of the following BEST describe the objective of tools supporting web-based testing?

a) To generate test cases by executing a model of the run-time behavior.
b) To isolate faults in the user interface by changing variable values during line by line code execution.
c) To measure the quality of a test suite by injecting defects into the test object.
d) To check for accessibility standards violations.
e) To check for orphaned files by scanning through the server.

Select TWO options.

Question #43 (1 Point)

Which of the following BEST describes how tools can support the practice of model-based testing (MBT)?

a) MBT tools can be used to generate test cases by saving interesting execution threads.
b) MBT tools significantly increase the number of paths that can be generated in a model.
c) MBT tools provide an alternative view of the internal structure of the software under test.
d) MBT tools often provide an engine that enables 'execution' of models but execution threads cannot be saved.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Question #44 (1 Point)

Which of the following statements about component testing tools and build automation tools is FALSE?

a) An xUnit framework can be used to automate component testing; build automation tools execute automated component tests.
b) A JUnit framework can simplify automation of component testing in a Java environment; build automation tools automatically trigger the component tests whenever a component changes in a build.
c) Component testing frameworks can simplify automation of component testing; build automation tools allow a new build to be triggered when a component is changed.
d) Component testing tools can be used against multiple programming languages; build automation tools allow a new build to be triggered when a component changes.

Select ONE option.

Question #45 (1 Point)

Which of the following statements best captures the difference between emulators and simulators when used in a mobile application testing context?

a) A mobile emulator models the mobile platform's runtime environment and a simulator utilizes the same runtime environment as the physical hardware.
b) Applications compiled to be deployed and tested on a simulator could be also used by the real device. This is not the case for emulators.
c) Simulators are useful in the early stage of development and emulators are useful in the later stages.
d) Emulators and simulators allow the setting of various usage parameters.

Select ONE option.

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

Additional Questions

When constructing the exam, certain learning objectives may be examined optionally. In order to give full coverage of learning objectives, the following alternative questions are provided in this chapter.

Question	Learning objective covered in sample exam	Alternative question	Learning objective covered in alternative question (see below)
Question 26	TTA-4.3.1	Question 26 alternative 2	TTA-4.3.2
Question 27	TTA-4.4.1	Question 27 alternative 2	TTA-4.4.2
Question 28	TTA-4.5.1	Question 28 alternative 2	TTA-4.5.2
Question 29

Question 30 | TTA-4.6.1

TTA-4.7.1 | Question 29/30 alternative 2 | TTA-4.8.1 |

Question 26 Alternative 2 (1 Point)

The planning and specification of security tests for a new web-based hotel reservation system is to be carried out at your next sprint planning meeting. Which of the following activities should NOT be considered at the meeting?

   a) Deciding on the code modules for static analysis
   b) Agreeing with developers on their participation
   c) Deciding on the operational profiles to use
   d) Checking on approvals for performing the tests

Select ONE option.

Question 27 Alternative 2 (1 Point)

An emergency call system for the police is required to stay on-line at all times, even in the event of software or hardware failures. The system relies on inputs from other systems and includes appropriate architectural elements to ensure that the requirement for permanent operability can be achieved.

Which of the following quality characteristics would you highlight in your planning as being the most important to test?

   a) Maturity
   b) Fault tolerance

Technical Test Analyst, Advanced Level
Exam ID: A
Sample Exam

International
Software Testing
Qualifications Board

c) Availability
d) Capacity
e) Recoverability

Select TWO options.

Question 28 Alternative 2 (1 Point)

A web-based application which manages ticket sales for major sporting events is under development. These events may take up to 100,000 spectators and generally attract more than five time that number of ticket requests. A decision has been taken to conduct performance efficiency tests. Which of the following tasks would you highlight in your planning as being the most important for these tests?

a) Determining the required hardware and network bandwidth needed to generate the maximum expected loads for the performance tests
b) Estimating the income expected from ticket sales
c) Acquiring representative user behavior patterns for this kind of application
d) Considering the modularity of the system under test
e) Reviewing the system architecture to establish the potential for replacing the web server with a different product

Select TWO options.

Question 29/30 Alternative 2 (1 Point)

Which of the following reasons can be given for including co-existence testing in a test approach?

a) An application is intended to be operated on different platforms
b) Several changes are planned to an application's code modules. Changes to one module should have an impact on other modules
c) More than one unrelated application is to be deployed on the same environment
d) The usage of system resources must be measured against a predefined benchmark

Select ONE option.