Sample Exam – Answers

Sample Exam set A
Version 1.2

ISTQB® Performance Testing Syllabus Specialist

Compatible with Syllabus version 2018

International Software Testing Qualifications Board

Provided by:
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and:
German Testing Board

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

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Revision History

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Version	Date	Remarks
1.2	September 29, 2021	Updated the purpose of document Inserted missing correct answers in Answer Key table Correction to question: #22
1.1	June 14, 2021	Update of Copyright Notice Update of layout
1.0	December 9, 2018	First version

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Introduction

Purpose of this document

The example questions and answers and associated justifications in this sample exam 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
- Providing training providers and exam candidates with examples of exam questions

These questions cannot be used as-is in any official examination.

Note, that real exams may include a wide variety of questions, and this sample exam ***is not*** intended to include examples of all possible question types, styles or lengths, also this sample exam may both be more difficult or less difficult than any official exam.

Instructions

In this document you may find:

- Answer Key table, including for each correct answer:
  - K-level, Learning Objective, and Point value
- Answer sets, including for all questions:
  - Correct answer
  - Justification for each response (answer) option
  - K-level, Learning Objective, and Point value
- Additional answer sets, including for all questions [does not apply to all sample exams]:
  - Correct answer
  - Justification for each response (answer) option
  - K-level, Learning Objective, and Point value

- *Questions are contained in a separate document*

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Answer Key

Question Number (#)	Correct Answer	LO	K-Level	Points
1	b	PTFL-1.1.1	K2	1
2	d	PTFL-1.2.1	K2	1
3	a	PTFL-1.2.1	K2	1
4	d	PTFL-1.3.1	K1	1
5	c	PTFL-1.4.1	K2	1
6	d	PTFL-1.5.1	K2	1
7	a	PTFL-2.1.1	K2	1
8	a	PTFL-2.2.1	K2	1
9	c	PTFL-2.3.1	K2	1
10	c	PTFL-2.4.1	K1	1
11	a	PTFL-3.1.1	K2	1
12	c	PTFL-3.1.1	K2	1
13	b	PTFL-3.2.1	K2	1
14	d	PTFL-3.2.1	K2	1
15	a	PTFL-3.2.1	K2	1
16	d	PTFL-3.3.1	K4	1
17	c	PTFL-3.4.1	K4	1
18	b	PTFL-4.1.1	K4	1
19	a	PTFL-4.1.2	K4	1
20	b	PTFL-4.1.3	K4	1

Question Number (#)	Correct Answer	LO	K-Level	Points
21	a	PTFL-4.1.3	K4	1
22	b	PTFL-4.2.1	K2	1
23	a	PTFL-4.2.1	K2	1
24	b	PTFL-4.2.2	K2	1
25	b	PTFL-4.2.2	K2	1
26	b	PTFL-4.2.3	K4	1
27	c	PTFL-4.2.4	K4	1
28	b	PTFL-4.2.5	K4	1
29	c	PTFL-4.2.6	K2	1
30	d	PTFL-4.2.6	K2	1
31	a	PTFL-4.2.7	K3	1
32	c	PTFL-4.2.7	K3	1
33	a	PTFL-4.2.8	K2	1
34	b	PTFL-4.2.8	K2	1
35	b	PTFL-4.3.1	K2	1
36	c	PTFL-4.3.1	K2	1
37	c	PTFL-4.4.1	K4	1
38	d	PTFL-5.1.1	K2	1
39	a	PTFL-5.1.1	K2	1
40	c	PTFL-5.2.1	K4	1

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Answers

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
1	b	a) Is not correct. Because tests are sometimes quite complex to create b) Is correct. Reproducible results are a key factor in performance test execution. The results should be statistically identical when run on the same unchanged system c) Is not correct. Because tests generally should not be run in the actual production environment, but rather a representative equivalent d) Is not correct. Because the test results may show that the system does not meet expectations.	PTFL-1.1.1	K2	1
2	d	a) Is not correct. Is a description of load testing b) Is not correct. Is a description of stress testing c) Is not correct. Is a description of scalability testing d) Is correct. This is a description of spike testing	PTFL-1.2.1	K2	1
3	a	a) Is correct. This is a description of load testing b) Is not correct. Is a description of stress testing c) Is not correct. Is a description of scalability testing d) Is not correct. Is a description of spike testing	PTFL-1.2.1	K2	1
4	d	a) Is not correct. Because this occurs at system or SIT b) Is not correct. Because this occurs during SIT c) Is not correct. Because this is done during integration testing d) Is correct. While this can occur at any time, it should start with unit testing	PTFL-1.3.1	K1	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
5	c	a) Is not correct. Because this is crowd testing, and these testers would be using the real UI b) Is not correct. Because the communications protocol level is one level below the API level c) Is correct. Testing through the API makes the most sense when the UI is likely to change, but the full communication to and from the UI must be tested d) Is not correct. Because many test instances can be created with API testing	PTFL-1.4.1	K2	1
6	d	a) Is not correct. Is an indication of underlying performance issues such as bad design, under-powered hardware, network latency, etc. b) Is not correct. Is an indication of resource pool or queue or stack issues as well as invalid timeout settings c) Is not correct. Is an indication that some of the resources may become saturated, but only at high loads d) Is correct. With a memory leak, response time will degrade over time (the time length is unknown though until you test it)	PTFL-1.5.1	K2	1
7	a	a) Is correct. A high latency means that there are delays occurring in the network which may be due to inadequate bandwidth b) Is not correct. Because low latency is a good thing c) Is not correct. Because this is trackable with the right tools d) Is not correct. Because if there is variability, that needs to be understood as part of the performance tests	PTFL-2.1.1	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
8	a	a) Is correct. Aggregated results help to provide the big picture and to observe consistent trends. Aggregating the results helps to identify and understand the importance of outliers and to know which ones interesting vs are just test aberrations b) Is not correct. Because aggregated results will eliminate the information on the outliers c) Is not correct. Because aggregation allows you to see the big picture rather than focusing on the individual results which may be due to transient system noise. It is unlikely to ever reach the point where “all” variations are understood d) Is not correct. Because this type of reporting will be too difficult for stakeholders to understand and may focus on the highly unlikely situations	PTFL-2.2.1	K2	1
9	c	a) Is not correct. As these are general system monitoring tools b) Is not correct. As these are performance testing tools c) Is correct. The log analysis tools scan the server logs for particular error types (high usage, memory errors, etc.) and report on those d) Is not correct. Because the performance test results are not written to the logs, rather the system activities during the performance tests are written to the logs	PTFL-2.3.1	K2	1
10	c	a) Is not correct. As this is a result of an endurance test b) Is not correct. Because this is an example of resource degradation over time c) Is correct. This is a description of a failure that has resulted from a spike test. d) Is not correct. Because this is the result of a scalability test	PTFL-2.4.1	K1	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
11	a	a) Is correct. Risk identification and analysis is done at the test planning stage. This information is then used for the analysis and design of the tests b) Is not correct. Because this is too late in the process c) Is not correct. Because this is too late in the process d) Is not correct. Because this is too late in the process	PTFL-3.1.1	K2	1
12	c	a) Is not correct. Because this is when the test cases are planned and designed b) Is not correct. Because this is when the test cases are planned and designed c) Is correct. This should occur during the test implementation and execution activities d) Is not correct. Because this is too late	PTFL-3.1.1	K2	1
13	b	a) Is not correct. Because these environments are not prone to connection dropping b) B is correct according to the syllabus. Mobile and embedded environments are particularly prone to connectivity issues particularly when embedded software is used in the IoT devices c) Is not correct. Because other than #7, the other environments are not prone to connection dropping d) Is not correct. Because these environments are not prone to connection dropping	PTFL-3.2.1	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
14	d	a) Is not correct b) Is not correct c) Is not correct d) Is correct. The virtualized environment uses shared resources across different applications, including memory. The dynamic/cloud-based environment are designed to dynamically scale, so while memory leaks may occur, they are less of a risk because the environment will scale to compensate. Client/Server and browser-based environments are prone to memory leaks, particularly since a lot of this code is written in C and C++. Mobile environments are prone to leakage and are particularly at risk due to the limited available memory. The same is true of the embedded environments (and these also tend to be written in languages that have less protection against leaks). Mainframes tend to run older code, often written in the higher-level languages that provide their own memory management	PTFL-3.2.1	K2	1
15	a	a) Is correct. C and C++ require the programmer to do their own memory management which sometimes results in memory leaks (where memory is allocated, but not de-allocated) b) Is not correct. Would have the same issues regardless of the language used c) Is not correct. Would have the same issues regardless of the language used d) Is not correct. Would have the same issues regardless of the language used	PTFL-3.2.1	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
16	d	a) Is not correct. Because it ignores looking at the risks during development b) Is not correct. Because it leaves out the requirements and development and at the completion of development c) Is not correct. Because it leaves out the requirements and development options for analysis d) Is correct. Since performance is critical, the risks must be analyzed as early as possible and then repeatedly as the system is assembled since risks may change both in impact and likelihood	PTFL-3.3.1	K4	1
17	c	a) Is not correct. Because this leaves out the static testing b) Is not correct. Because this would bypass any issues that might occur at the UI end and does not consider the database loading c) Is correct. The best way to do the testing is to first do a technical analysis because this can be done at the design time. Once implemented, full testing will be needed to verify that the solution does indeed deliver the required performance d) Is not correct. Because the network is less likely an issue regarding the data handling for such a large amount of data	PTFL-3.4.1	K4	1
18	b	a) Is not correct. Because this is a user-based objective b) Is correct. Scalability is a technical objective for performance c) Is not correct. Because this is also a user-based objective and not a very clear one at that d) Is not correct. Because this is primarily a robustness test rather than a performance test	PTFL-4.1.1	K4	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
19	a	a) Is correct. Because data retrieval time is critical to the project, you need to know who can access that data (so you can get the user profiles created), what data they will access (so you can be sure you have the right data available) and how often will they access it (so you can set up an operational profile) b) Is not correct. Because this is more related to security than performance testing and is not the most critical performance objective c) Is not correct. Because the data storage may be something to investigate if the data retrieval proves slow, but we do not need to know it to conduct the tests d) Is not correct. Because that is after retrieval and the scenario just discusses presenting the information to the requestor	PTFL-4.1.2	K4	1
20	b	a) Is not correct. Because this is information that should be shared with the technical stakeholders b) Is correct. This is information that should be conveyed to the business stakeholders c) Is not correct. Because it is incomplete. If testing will be conducted in production, mitigation plans must also be made so that any impact to production is understood d) Is not correct. Because this is a list of risks but does not include a list of how the tests will help mitigate these risks	PTFL-4.1.3	K4	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
21	a	a) Is correct. This is information that should be conveyed to the technical stakeholders because it shows how the tests will be conducted b) Is not correct. Because this is information that should be shared with the business stakeholders c) Is not correct. Because it is incomplete. If testing will be conducted in production, mitigation plans must also be made so that any impact to production is understood d) Is not correct. Because this is a list of risks but does not include a list of how the tests will help mitigate these risks	PTFL-4.1.3	K4	1
22	b	a) Is not correct. Is an example of a database protocol b) Is correct. This is an example of a web protocol c) Is not correct. Is an example of a web service protocol d) Is not correct. Is an example of a network protocol	PTFL-4.2.1	K2	1
23	a	a) Is correct. This is an example of a database protocol b) Is not correct. Is an example of a web protocol c) Is not correct. Is an example of a web service protocol d) Is not correct. Is an example of a network protocol	PTFL-4.2.1	K2	1
24	b	a) Is not correct b) Is correct. This is referred to as think time c) Is not correct d) Is not correct	PTFL-4.2.2	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
25	b	a) Is not correct. Because parent and child transactions may not accomplish anything meaningful in terms of system usage b) Is correct. The discrete transactions can be nested together to provide response information for a series of transactions that would normally be performed together while still allowing measurement of the discrete transactions as well c) Is not correct. Because it will not affect the reporting time, particularly if the discrete transactions are tracked as well. It may increase reporting time d) Is not correct. Because this has nothing to do with bypassing network communications	PTFL-4.2.2	K2	1
26	b	a) Is not correct. Is not needed for this instance because we already have the information b) Is correct. At this point, we need to know how many users of this type will be accessing the system. We know the concurrency because we can take the number of users and the accesses per shift to figure this out c) Is not correct. Considerations for setting up the load profile but not needed for the operational profile d) Is not correct. Considerations for setting up the load profile but not needed for the operational profile	PTFL-4.2.3	K4	1

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27	c	Total transactions should be 2500 doctors x 10 accesses x 6 record updates: 150,000 transactions per day. Hourly load: 7 hours of 500 doctors = 21,000 transactions 11 hours of 1000 doctors = 66,000 transactions 3 hours of 1500 doctors = 27,000 transactions 3 hours of 2000 doctors = 36,000 transactions Doctors per hour in 24-hour clock: 1:00 - 500 2:00 - 500 3:00 - 500 4:00 - 500 5:00 - 500 6:00 - 500 7:00 - 1000 8:00 - 1000 9:00 – 1000 10:00 - 1000 11:00 - 1000 12:00 - 1000 13:00 - 1000 14:00 - 2000 15:00 - 2000 16:00 - 2000 17:00 - 1000 18:00 - 1000 19:00 - 1000 20:00 - 1000 21:00 - 1500 22:00 - 1500 23:00 - 1500 24:00 – 500	PTFL-4.2.4	K4	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
		Thus: a) Is not correct b) Is not correct c) Is correct d) Is not correct			
28	b	a) Is not correct b) Is correct. The highest concurrent usage is when 2000 doctors are working from 2:00-5:00 in the afternoon. Each doctor has only one access per hour according to the question and that access has up to 6 updates c) Is not correct d) Is not correct	PTFL-4.2.5	K4	1
29	c	a) Is not correct. Because this scripting can be quite difficult without using a tool to capture the protocol level communication b) Is not correct. Because the UI is bypassed c) Is correct. This is a scalable method because it bypasses the UI so you can run many of these tests at the same time without requiring the client d) Is not correct. Because data correlation is more difficult because the correlation done at the UI is bypassed	PTFL-4.2.6	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
30	d	a) Is not correct. Because no errors do not mean that it worked – it could just mean that the error handling is also broken b) Is not correct. Because this could be a very time-consuming approach c) Is not correct. Because the application may have a defect that causes it to not find the new users d) Is correct. Scripts should contain their own checks that the process has worked and verifying via the database directly is a more efficient way to do it (and more maintainable) than having the script do the verification through the application (which may also be wrong) as this adds to the maintenance requirements of the script	PTFL-4.2.6	K2	1
31	a	a) Is correct. The problem is most likely with the system identifier that is given to that particular user when they login. When they try to do another transaction, that unique identifier needs to be passed to the system so it can provide access to the transaction b) Is not correct. Because there is no indication that this is the problem c) Is not correct. Because the question indicates that the doctor performs multiple lookups per access d) Is not correct. Because if this were happening, it would log in as the previous user, not error out on the login	PTFL-4.2.7	K3	1
32	c	a) Is not correct. Is highly unlikely as systems tend to get slower, not faster, unless there is a caching issue b) Is not correct. Because it is not the user's information that is being re-used but rather the search results c) Is correct. This is a symptom of caching and can be avoided by either varying the data or by clearing the cache d) Is not correct. Because it is not the user's information that is being re-used but rather the search results	PTFL-4.2.7	K3	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
33	a	a) Is correct. The less like production the performance testing system is, the less reliable are the results and this increases the risk of making incorrect assumptions b) Is not correct. It could happen, but not necessarily c) Is not correct. Because there is no reason to think the results would be easier to understand with a different configuration d) Is not correct. Because the project risk would actually be increased in this case	PTFL-4.2.8	K2	1
34	b	a) Is not correct. Will not occur if the tool is configured properly b) Is correct. A load generator, particularly if you are running multiples on one machine, may slow down enough that it is no longer maintaining the desired load on the system c) Is not correct. Will not occur if the tool is configured properly d) Is not correct. Is not an issue as the load generator is not usually used to generate the performance results – it just creates the load on the system so the performance tests can be conducted	PTFL-4.2.8	K2	1
35	b	a) Is not correct. Because the goal of the ramp up to is to get the number of users to the point desired for the test, not to exceed that number b) Is correct. The system must have started up and achieved a steady state for valid steady state performance metrics to be gathered c) Is not correct. Because ramp up is increasing load, not decreasing it getting ready for shut down d) Is not correct. Because this has nothing to do with ramp up and should be tested before any official tests are started	PTFL-4.3.1	K2	1
36	c	a) Is not correct b) Is not correct c) Is correct. This is achieved with spike tests which force the system to transition between a low load to a high load in a short period of time d) Is not correct	PTFL-4.3.1	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
37	c	a) Is not correct. This is also a problem with the requirements being unclear. Does it have to be less than 3 seconds 100% of the time? Or is it acceptable if it is 95%? As stated though, the system has failed the test and the requirements should be revisited. b) Is not correct. Because the goal did not stay 85% of the time was acceptable c) Is correct. Might be a good result if the requirements had been better defined. Right now, they say that 100% must be less than 3 seconds. Realistically though, the 90% time should be investigated to see if there are a few outliers that are bringing it down or if it is always at the 5 second mark. More tuning should be attempted though because this is a critical system and performance could be life or death impacting d) Is not correct. Because tuning to get to below 3 seconds 100% of the time will probably not be possible	PTFL-4.4.1	K4	1
38	d	a) Is not correct. Is a network analysis tool b) Is not correct. Might be a browser testing tool or might not exist c) Is not correct. Is a monitoring too d) Is correct. This is what a load generator tool does	PTFL-5.1.1	K2	1
39	a	a) Is correct. This is the description of a pay-as-you-go tool. These are often cloud-based tools but not all cloud-based tools are pay-as-you-go b) Is not correct. As these are not descriptions of pay-as-you-go tools c) Is not correct. As these are not descriptions of pay-as-you-go tools d) Is not correct. As these are not descriptions of pay-as-you-go tools	PTFL-5.1.1	K2	1

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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
40	c	a) Is not correct b) Is not correct c) Is correct. At this point you know that your testers are able to code what is needed. The project schedule is not really a factor because any tool will take time to acquire and integrate, but the developers can code in it, so that is the main schedule factor. What you need to know is can this tool simulate the necessary number of virtual users and, of course, how much will it cost d) Is not correct	PTFL-5.2.1	K4	1

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