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ISTQB Certified Tester Foundation Level - Specialist Performance Testing

iSQI CTFL-PT_D

Version Demo

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QUESTION NO: 1 - (SIMULATION)

Identify the correspondences between the different tools (listed from 1 to 3) and their objectives and characteristics (listed from A to F).

1.Load generator.

2.Load management console.

3.Monitoring tool.

1.It monitors, records and/or analyzes the behavior of the component or system under test.

2.It creates the load and also collects the metrics for later communication.

3.It provides the control to start and stop the creation and execution of the user simulation.

4.It aggregates metrics from the various transactions that are defined within the load instances

5.It creates and runs multiple client instances that simulate user behavior.

6.It can effectively support a root cause analysis of performance in a system under test.

SELECT ONE OPTION

ANSWER: See the explanation for the answer

Explanation:

Correct correspondence:

1. Load generator → B (2) and **E (5)**
2. Load management console → C (3) and **D (4)**
3. Monitoring tool → A (1) and **F (6)**

Therefore, the answer is **1B, 1E, 2C, 2D, 3A, 3F**.

A load generator runs the simulated client/user instances and collects their load-test metrics. The load management console controls execution (such as starting and stopping simulations) and aggregates transaction metrics. A monitoring tool observes and records system/component behavior and provides evidence useful for performance root-cause analysis.

QUESTION NO: 2

(REFER TO BASE SCENARIO 2): When you refer to Base Scenario 2, you are referring to the description and only the description, without any modification.

Question specific constraints: (specific constraints are not part of the Base Scenario and are specific to this question).

Throughout the month of January (31 days), the company performed 3,100 departure operations from the Capital City Airport. These departure operations transported 465,000 passengers during the hours of operation, from 07:00 to 23:00.

The departing passengers (one of the most relevant operational profiles) will access the front-end of the application to check in for their flight. It is known that 30% of departing passengers reconnect after checking in to request the boarding pass to be resent or printed.

Question

Assuming there is one boarding every 5 minutes, what should be the minimum front-end processing capacity of the system for the "departing passenger* user? It is assumed that there will be 12 peaks or maximums per hour.

SELECT ONE OPTION

A. 100 * 12 + (60-12) *4.69 = 1,425.12 transactlons/hour

B. 100 « 12 + (60 -12) * (10.42 - 4.69) = 1.475.04 transactions/hour

C. 100 * 12 + (60 -12) * 15.10 = 1,924.80 transactions/hour

D. 100 * 12 + (60 -12) * 10.42 = 1.700.16 transactions/hour

ANSWER: C

Explanation:

The required minimum capacity is **100 * 12 + (60 - 12) * 15.10 = 1,924.80 transactions/hour**. The twelve boardings per hour represent twelve peak minutes, each requiring processing capacity for 100 front-end transactions. This contributes 1,200 transactions per hour. The remaining 48 minutes must still support the normal transaction flow generated by the departing-passenger profile.

That normal flow must include both the initial check-in activity and the additional boarding-pass resend or print activity. The initial check-in rate is 10.42 transactions per minute and the reconnect/resend rate is 4.69 transactions per minute. Together, using the underlying unrounded values, these produce approximately 15.10 transactions per minute. Across 48 non-peak minutes, this is 724.80 transactions. Adding the peak and non-peak demand gives 1,924.80 transactions per hour.

This follows performance-testing workload modelling practice: capacity requirements must account for all relevant transactions performed by a user profile, including follow-up actions, and must model peak demand separately from normal demand. The ISTQB Performance Testing certification scope includes deriving workload models and evaluating system capacity under expected load patterns. See the ISTQB Certified Tester Performance Testing overview and the ISTQB official website.

QUESTION NO: 3

Select the option that identifies the possible causes of the degradation of a system's response over time during dynamic performance testing.

1.Disk fragmentation.

2.Network latency.

3.File repository growth.

4.Memory leaks.

5.Inadequate database design.

SELECT ONE OPTION

A. True options: I, III, IV.

B. True options: II, III, IV.

C. True options: II, III, V.

D. True options: I, II, IV.

ANSWER: A

Explanation:

True options: I, III, IV. is correct because dynamic performance testing examines how performance characteristics develop while a system operates over an extended period under workload. Disk fragmentation can progressively increase the time needed to locate and read data, particularly where application processing involves frequent file access. File repository growth is a time-dependent condition: as stored files and associated metadata accumulate, operations such as searching, indexing, retrieving, and maintaining repository content can require more resources and take longer. Memory leaks are a classic cause of gradually worsening response times because memory that is no longer needed is not released. Over time, the process or system has less usable memory, which can increase garbage collection, paging, resource contention, or eventually cause instability. These are therefore appropriate targets for endurance-style dynamic tests, where measurements are collected over a sufficiently long run to reveal deterioration rather than only initial response behavior. The ISTQB Performance Testing certification scope includes testing performance efficiency characteristics and using test types

such as endurance testing to identify degradation over time. See the ISTQB Certified Tester Performance Testing information and the iSQI CT-PT certification page.

QUESTION NO: 4

Identify the activity that is NOT part of the performance test preparation.

SELECT ONE OPTION

A. Deploying the environment.

B. Setting up the system under test.

C. Setting up the load generation and monitoring tools and making sure that all the necessary information will be collected.

D. Virtualizing the servers.

ANSWER: D

Explanation:

Virtualizing the servers is the activity that is not part of the defined performance test preparation activities. Performance test preparation focuses on making the test ready for controlled execution and meaningful measurement. This includes deploying the required test environment, establishing the system under test in the intended configuration, and preparing load-generation and monitoring capabilities so that the necessary performance data can be captured throughout execution. The collected information supports later analysis of response times, throughput, resource utilization, and observed bottlenecks against the agreed performance objectives and risks.

Server virtualization may be an architectural or infrastructure decision for an organization, and virtual machines can certainly be used in a performance test environment. However, creating or virtualizing servers is not itself identified as a performance-test-preparation activity in the ISTQB process. The relevant preparation concern is that the environment and its components are available, configured, monitored, and sufficiently representative for the planned test. This distinction keeps performance testing focused on preparing repeatable workloads and trustworthy observations rather than on selecting a particular infrastructure implementation approach. See the ISTQB Performance Testing certification overview and the ISTQB Certified Tester Foundation Level resources.

QUESTION NO: 5

Select the architecture that, in addition to the virtualized systems, could present performance risks associated with virtualization.

SELECT ONE OPTION

A. Dynamic/cloud-based systems.

B. Multi Tier systems.

C. Client-server systems.

D. Distributed systems.

ANSWER: A

Explanation:

Dynamic/cloud-based systems is correct because cloud environments commonly use virtualization as the mechanism for provisioning, scaling, relocating, and consolidating workloads. Their resources may be allocated elastically in response to demand, so a workload’s performance can depend not only on its own activity but also on the capacity and behavior of the underlying virtual infrastructure at a particular time. This can introduce variability in response times, throughput, and resource availability that must be considered when defining performance risks, designing representative tests, and interpreting results.

The ISTQB Performance Testing syllabus identifies dynamic/cloud-based systems alongside virtualized systems as architectures whose characteristics can create performance-testing concerns. In practical testing, this means establishing whether environments use shared or dedicated resources, accounting for scaling behavior, and monitoring relevant infrastructure metrics during a test. These steps help distinguish application behavior from effects introduced by the dynamically provisioned virtual environment. The certification overview and syllabus materials are available from ISTQB Certified Tester Performance Testing; terminology concerning virtualized environments can also be consulted in the ISTQB Glossary entry search for virtualization.

QUESTION NO: 6

Choose the option that BEST describes valid opportunities for the dynamic performance testing.

SELECT ONE OPTION

A. During component Integration testing, across any kind of use cases and workflows, especially when integrating different use case features or Integrating with the "backbone" structure of a workflow.

B. During system testing of overall end-to-end behaviors under various load conditions.

C. During acceptance testing, especially for data flows and workflows across key inter-system interfaces. In system integration testing, it is not uncommon for the "user* to be another system or machine (e.g. inputs from sensor inputs and other systems).

D. During unit testing, including using or not profiling information to determine potentialbottlenecks and white box techniques to evaluate resource utilization.

ANSWER: B

Explanation:

"During system testing of overall end-to-end behaviors under various load conditions." is the best description because dynamic performance testing requires the system to execute realistic workloads while measurements are taken. At the system-test level, representative end-to-end business flows can exercise the integrated application, its databases, services, network connections, and other supporting infrastructure together. Applying varying load conditions to those flows enables the test team to observe performance characteristics such as response time, throughput, resource utilization, scalability, and stability in conditions that reflect intended operational use.

This level is especially valuable because performance issues frequently emerge from interactions across components rather than from an isolated implementation detail. A system-level workload can therefore reveal bottlenecks and capacity constraints while also providing evidence that defined performance requirements are met for complete user journeys. The ISTQB Certified Tester Performance Testing syllabus identifies system testing as an important opportunity for performance testing, including the execution of end-to-end behaviours under load. See the ISTQB Certified Tester Performance Testing certification and syllabus resources and the ISTQB Glossary entry search for performance testing.