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iSQI CTFL-PT

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Topic Break Down

Topic	No. of Questions
Topic 1, Basic Concepts of Performance Testing	20
Topic 2, Performance Testing Fundamentals	18
Topic 3, Performance Testing Activities	30
Topic 4, Performance Testing Tasks	9
Topic 5, Tools	14
Total	91

QUESTION NO: 1

How does a performance test script determine the duration of a request?

A. Starting a counter when the result is received and stopping the counter when the request is made

B. Entering an interrupt service routine when the request is made and returning when the result is received.

C. Forking a child of itself and then blocking when the request is made and resuming operations when the result is received

D. Starting a timer when the request is made and stopping the timer when a result for the request is received.

ANSWER: D

Explanation:

Starting a timer when the request is made and stopping the timer when a result for the request is received is correct because request duration is an elapsed-time measurement. A performance test tool records a start timestamp immediately before it sends or initiates the request, then records an end timestamp when it receives the corresponding response or result. The difference between these timestamps is the request's response time (often also called elapsed time). This measurement represents the time observed by the test script or virtual user, so it can include relevant client-side and network effects in addition to server processing, depending on the tool and test design. Capturing timing at these two defined events allows the tool to produce consistent response-time statistics, such as minimum, maximum, percentile, and average values, across many iterations and concurrent virtual users. The boundaries must correspond to the same request/response transaction so that the resulting metric can be correlated with the tested user action and evaluated against performance objectives. Apache JMeter defines elapsed time as the interval from just before sending a sample until just after the last response has been received; see the Apache JMeter glossary. The ISTQB performance-testing certification scope also covers measuring and evaluating performance characteristics and test results; see ISTQB Certified Tester Performance Testing.

QUESTION NO: 2

Which of the following performance tests could be best considered to be the opposite to the endurance test when comparing the duration of thetests?

A. load test

B. scalability test

C. spike test

D. concurrency test

ANSWER: C

Explanation:

spike test is correct because it focuses on the application's behavior during a very rapid, typically short-lived, increase in workload or number of users. Its purpose is to determine whether the system can accommodate an abrupt surge, recover appropriately after the surge, and maintain acceptable behavior while demand changes sharply. In terms of test duration, this contrasts with endurance testing, which applies a sustained workload for an extended period to expose problems that emerge over time, such as resource depletion, memory leaks, deteriorating response times, or instability. A spike test therefore concentrates on an immediate and transient workload event rather than prolonged operation. The ISTQB performance-testing terminology distinguishes endurance testing by its extended execution and identifies spike testing as testing involving sudden, substantial workload changes. This makes spike testing the best counterpart when the comparison is specifically about duration. The performance-testing syllabus and terminology are available from ISTQB Performance Testing certification and the ISTQB Glossary.

QUESTION NO: 3

A payment service meets its response-time objective at low load. As the number of concurrent users increases, response time rises sharply, transaction throughput stops increasing, and database connection-pool utilization reaches 100%.

What is the most likely immediate cause of the observed performance degradation?

A. An insufficient database connection pool

B. Excessive client think time

C. An over-sized test-data set

D. Too many performance monitors

ANSWER: A

Explanation:

The database connection pool is the most likely bottleneck because it has reached full utilization while throughput has ceased to increase. Requests requiring a database connection will wait for a connection to become available, increasing response time as additional users arrive.

A performance bottleneck is a component or resource that limits the ability of the system to process additional workload. Monitoring resource utilization together with response time and throughput helps identify such constraints. See the ISTQB Glossary entry for bottleneck.

QUESTION NO: 4

Which of the following protocols would allow a test script to interact with a web server for ecommerce transaction testing?

A. JDBC

B. SOAP

C. HTTPS

D. IMAP

ANSWER: C

Explanation:

HTTPS is the appropriate protocol because e-commerce web applications normally use it for the browser-to-web-server interactions that a performance test script must emulate. HTTPS is HTTP carried over TLS, providing encrypted transport and server authentication for sensitive transaction data such as credentials, customer information, shopping-cart actions, and payment-related requests. A performance-testing tool can record or construct HTTPS requests to exercise the same web endpoints used during realistic user journeys, then measure response times, throughput, resource use, and behavior under concurrent load. This makes HTTPS directly relevant to testing web-server transactions such as product searches, login, checkout, and order confirmation. The HTTP semantics within HTTPS also support the request methods, headers, cookies, redirects, and response status codes commonly needed for accurate transaction scripting and correlation. The TLS specification describes HTTPS as HTTP over TLS, while web-security guidance recommends HTTPS to protect web traffic and user data. See RFC 9110: HTTP Semantics and MDN: Overview of HTTP.

QUESTION NO: 5

A retail organization requires that 95% of completed checkout transactions respond within two seconds during the expected peak workload.

Which response-time measure is most appropriate for determining whether this requirement has been met?

A. Average response time

B. 95th percentile response time

C. Maximum response time

D. Median response time

ANSWER: B

Explanation:

The **95th percentile response time** is the appropriate measure because it identifies the response time at or below which 95% of the observed checkout transactions completed. It can be compared directly with the requirement of two seconds.

An arithmetic average can hide a proportion of slow transactions, while the maximum represents only the single slowest observation. Percentile measurements are therefore commonly used for service-level objectives where the acceptable experience must be achieved by a stated proportion of users. See the ISTQB Glossary and the ISTQB Certified Tester Performance Testing certification page.

QUESTION NO: 6

Which section of a performance test script is typically responsible for ensuring the script will have the right values and communication settings during execution?

A. main section

B. clean-up section

C. initialization section

D. timer section

ANSWER: C

Explanation:

The initialization section is responsible for preparing a performance test script so that its virtual users can execute with the required data, configuration, and communication context. Before the script performs its principal business transactions, this section commonly establishes connections or sessions, obtains or initializes test data, sets variables and parameters, configures headers or protocol-level settings, and performs any required authentication or state setup. These activities ensure that subsequent requests are sent with values that are valid for the particular virtual user and with the communication settings needed to interact correctly with the system under test.

This separation is important for realistic and maintainable performance testing. Setup activities that must occur before the measured workload begins can be placed in initialization, allowing the core workload to focus on the user journey or transaction being simulated. It also supports parameterization and correlation, so dynamic values and session-specific information are available when requests execute. The ISTQB performance-testing syllabus describes the need to design scripts that model user behavior and appropriately handle test data and dynamic data. Further certification information is available from ISTQB Certified Tester Performance Testing and the ISTQB CTFL Performance Testing certification page.

QUESTION NO: 7 - (SIMULATION)

You have been asked to test the performance of a software and system update to a North American mobile trivia quiz game application.The quiz app is available on major app stores serving English-speaking users.The number of concurrent users planned for is 5 million. Winning quiz participants are promised a share of an allocated cash prize Once participants start playing, their quiz sessions must not be lost especially if all previous questions were answered correctly. The application owner wants to ensure that 99% of quiz sessions are maintained (up to 4.95 million sessions) until the last answer has been successfully recorded

Before your team begins testing, the team needs to present the performance test plan to technical stakeholders

Which of the following sets of plan attributes would you recommend be included in this presentation?

i.Sales has indicated that quiz events for Sponsor A offering $65,000. Sponsor B offering $45,500. Sponsor C offering $25,000

will be taking place during the first week of performance testing.

ii. Simultaneous session tests are focused on the backend. and are not end-to-end. Variability in user behavior, mobile devicesand mobile communications introduces session drop opportunities outside application control. Using load generators located

in 5 high availability data centers in North America will ensure session drops are most likely caused by application issues, thus allowing us to isolatethe root cause of any concurrency issues that arise

iii.Test scripts based on replaying recorded communication will take 30 hours each to write and test due to the extensive parameterization required to

respond to quiz questions Development has agreed to share client code that can be scripted to authenticate and respond to quiz questions

automatically. The fully programmed script will likely take 18 hours each to write

and test Fully programmed scripts will utilize the identical communications stack of the actual client avoiding missed communication nuances.

iv The U S Federal Trade Commission has recently sued SmartyBogusFauxApp and OutSmartMeexample com over promises of prizes andunreliability

v The upgrade being tested was paid for by the latest round of venture funding Supporting 5 million users is requirement thatwas a condition of their funding.

i. ii include iii. iv, v exclude

ii, iii include i, iv, v exclude

ii, v include i, ii, iv exclude

iii. iv, v include i, ii exclude

ANSWER: See the explanation for the answer

Explanation:

Recommended attributes: ii, iii, and v should be included; i and iv should be excluded.

ii defines the test scope and approach: backend-focused concurrent-session testing, use of geographically distributed load generators, and the rationale for isolating application-related session drops.
iii describes the scripting solution, effort estimates, and a key technical decision: using client code/the real communications stack to improve protocol fidelity.
v provides an important business driver and performance requirement: supporting 5 million concurrent users is a funding condition. This gives stakeholders context for the test objective and its priority.

Exclude i because sponsor names and prize amounts do not define the technical performance-test scope or approach.
Exclude iv because lawsuits involving other applications are not a direct plan attribute for this system's performance testing.

The matching answer is the option intended to read: `ii, iii, v include; i, iv exclude` (the displayed option text appears to contain a typographical error).

QUESTION NO: 8

You have been asked to test the performance of a software and system update to a North American mobile trivia quiz game application.The quiz app is available on major app stores serving English-speaking users.The number of concurrent users planned for is 5 million Winning quiz participants are promiseda share of an allocated cash prize Once participants start playing, their quiz sessions must not be lost especially if all previous questions were answered correctly. The application owner wants to ensure that 99% of quiz sessions are maintained (up to 4 95 million sessions) until the last answer has been successfully recorded

An essential operational profile you identified is the quiz participant Your operational profile discovery efforts have yielded a number of profile attributes / quiz participant will answer twelve questions if they manage to answer the first eleven correctly Every user is made aware of a new question nearly simultaneously.The quiz user has limited time to respond using a mobile application.They are unable to respond to subsequent questions after they incorrectly answer a question. However, the quiz participant continues to see new questions even though they may have responded incorrectly to a previous question, if they manage to answer all twelve questions correctly, the quiz application notifies them that they have tentatively won (subject to formal verification) an equal share of a cash prize of an amount set for the particular quiz event In addition to this individualized interaction, a broadcast video stream is presented in the quiz app providing entertaining commentary, quiz event coordination event status and answer explanations.

The average quiz event duration when measured from when the first question is presented to the last answer is reviewed is fifteen minutes Over the fifteen minutes, twelve questions are presented to quiz participants.

Which of thefollowingIs a proper load profilefor thequiz participants?

A. 240.000,000 question responses per hour

B. Steady ramp-up of quiz response transactions from one million until the design maximum is reached within the first three questions.The maximum is sustained until question twelve

C. Stepped ramp-up of quiz response transactions from one million increasing by a one million after each question until the design maximum is reached.The minimum is sustained until question twelve.

D. Maximum number of planned concurrent quiz responses will occur at the first question with a stepped ramp-down after each question. The size of each step and the final number of nearly simultaneous quiz responses are random values within historical ranges observed over the last three quiz events.

ANSWER: D

Explanation:

Maximum number of planned concurrent quiz responses will occur at the first question with a stepped ramp-down after each question. The size of each step and the final number of nearly simultaneous quiz responses are random values within historical ranges observed over the last three quiz events. is the proper load profile because it represents the expected behavior of quiz participants throughout a live event. All planned participants can submit a response to the first question within a short, synchronized response window. After each question, some participants are eliminated by answering incorrectly and therefore do not submit responses to later questions. The transaction load is consequently not uniform: it is a sequence of sharp, nearly simultaneous response peaks, with the peak population declining at each subsequent question.

A stepped pattern is important because the application must withstand sudden bursts rather than a smooth average rate. Deriving the amount of reduction and the final response volume from historical ranges also models normal variation in quiz difficulty and participant behavior, while retaining a realistic operational basis for the test. This profile exercises the system's ability to preserve active sessions and record answers during the highest initial burst and during each later synchronized burst, including the critical final-answer processing period. The ISTQB performance-testing syllabus describes load profiles as representing the expected workload over time and emphasizes deriving them from operational usage information. See the ISTQB Certified Tester Performance Testing syllabus page and the ISTQB glossary definition of operational profile.

QUESTION NO: 9

Which measurements are associated with the environments listed below?

1. Batch completion time

2. Transaction throughput

3. Data restoration duration

4.. Normal use case flow duration

A. Technical Environment

B. Business Environment
C Operational Environment

C. 1B. 2B. 3C and 4B

D. 1B,2A,3B and 4A

E. 1A, 2A, 3B and 4A

F. 1A, 2B, 3C and 4B

ANSWER: C

Explanation:

The correct association is **1B. 2B. 3C and 4B**. Batch completion time is a business-oriented measure because it expresses whether a scheduled business workload completes within the time window needed by the organization. Transaction throughput is also business-oriented: it quantifies how many business transactions the system can process over a specified period while operating under the required workload. Similarly, normal use case flow duration measures the elapsed time for a user-facing or business-process flow and is therefore a business-environment measure.

Data restoration duration belongs to the operational environment. It concerns the system's ability to restore data and resume service following an operational incident, which is relevant to operational resilience, recoverability, and service continuity. These classifications support deriving performance criteria from the perspectives of business stakeholders, technical implementation, and operations. The ISTQB Performance Testing certification scope includes assessing performance characteristics and defining suitable performance criteria for different stakeholder needs. See the ISTQB Certified Tester Performance Testing overview and the ISTQB Foundation Level certification information.