

1. 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. In order to avoid cooperation among quiz participants, the answers to the multiple choice questions are listed randomly. Confidence in the game's fairness requires that a registered user originate from only one quiz client device. Every user must respond over the same short window of time in order to avoid external assistance and learning the official answer before responding. Only participants who respond correctly may answer the next question. Any activity that appears to violate expected behavior of a rule-following participant will cause the client session to be rejected. You are currently preparing test scripts to function as a quiz participant. What input data type is most critical for the test script to incorporate to ensure that the concurrency objective will be properly tested?

A. In order to properly test the concurrency objective, the test script must answer each trivia question with the same answer as every other virtual user.

B. In order to properly test the concurrency objective, the test script must provide a random password to the application's login system.

C. In order to properly test the concurrency objective, the test script must present a unique user name to the application's login system.

D. In order to properly test the concurrency objectives the test script must supply the system provided unique session ID with each answer provided.

2. 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. During your conversations with stakeholders you determine that an essential transaction was the quiz participant's responses to questions. As you prepare to speak to stakeholders regarding their test objectives for this transaction, you develop a collection of prepared questions to ask them. Which question is best aligned to the types of questions recommended for gathering test objectives information from stakeholders?

A. How long should it take before the user becomes aware that their last response was incorrect?

B. What are the targeted percentages of correct responses for each of the questions asked during a quiz event?

C. What are the target for CPU utilization and memory consumption for the web services platforms receiving question responses?

D. What is the projected participation growth rate over the next nine months?

3. Which tool is best suited for determining resource utilization of a system component under test?

A. load generator

B. management console

C. localization test tool

D. monitoring tool

4. 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

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

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

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

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

5. 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. Based on this scenario, when is it best time within this software and system update project to analyze and assess performance risks?

A. During the requirements phase

B. After design phase but prior to implementation phase

C Revisited over the course of the development Lifecycles

D. During user acceptance testing and subsequent regression testing

6. Which of the following protocols would allow a test script to interact with a database management system directly?

A. JDBC

B. SOAP

C. HTTPS

D. IMAP

7. Which Is a valid reason for why performance testing load would be applied to the SUT in ramp-up pattern during a performance test?

A. Frequent sudden significant increases of toad allows the SUT performance to stabilize after each jump in load thus exhibiting consistent behavior that results in measurements that are more reliable

B. Gradually increasing the load ensures the SUT remains in a transient performance condition as it responds to the new increase in load thus exhibiting realistic behavior that improves the realism of the performance test

C. Gradually increasing the load allows the SUT performance to stabilize after each progressive increment of load thus exhibiting consistent behavior that results in measurements that are more reliable

D. Frequent sudden significant increases of load ensures the SUT remains in a transient performance condition as it responds to each new large increase in load thus exhibiting consistent behavior that results in measurements that are more reliable.

**8. Which of the situations test adheres to general performance testing principles?**

- A. The performance test report compares results with negotiated stakeholder accepted measures and performance objectives
- B. Performance testers allow the performance test environment to change between test repetitions
- C. The performance test plan shows a test schedule that produces results a week after the project's delivery milestone with a budget 35% less than initially allocated

**D. Performance testers save planning time and money by avoiding stakeholder discussions and applying industry best practices to define performance measures and acceptable results**

**9. Which of the following activities is performed last within a performance test run?**

- A. Configure hardware and software to meet the test goal and plan
- B. Deploy load generators in places where users are located.

**C. Restore original data to ensure the system is in the proper state for testing**

- D. Verify the test run functioned properly by reviewing logs, database content and monitoring data

**10. 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

**11.** 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 business stakeholders. Which of the following sets of plan attributes would you recommend be part of this presentation?

A. During the actual quiz, users log on gradually but play simultaneously. The load injection of quiz responses will not ramp up, therefore nearly 5 million quiz responses will need to be generated in a 4 second time frame with no opportunity to reach steady state. Test plans have been discussed with Operations, Development, and Data Center representatives and we believe the tests will tax the quiz application consistent with actual use. The JMeter monitoring system has been tuned; however, with 5 million service requests over 4 seconds there is concern that the services queue measurements may be off by 25%.

B. There is a less than 10% chance of missing a scheduled quiz session due to performance test activities, which will likely cost the company \$50,000 in lost sponsor revenue and brand damage. To avoid this risk, we are scheduling Operations and Development representatives to be available during test execution. We will require that the RAID 5+1 LUNs associated with the database server cluster be broken at 22:30 and the RAID 5+1 LUNs restored, ensuring the offline set mirrors back to the RAID 5 set that was under test, at 03:00.

C. Since the client uses an asynchronous REST web services based sessions back to the QUZRA services cluster, the load profile will consist of virtual users running programmed load scripts based in C# that will randomly select the correct answer following a normal distribution, thus modeling the typical success distribution among users. The strict 4 second cap on user responses will translate into think times that are randomly selected between 1/2 second and just under 4 seconds using a uniform distribution.

D. If the quiz application drops more than 1% of quiz sessions, users will likely write bad reviews on app stores and other gaming sites. Performance tests will verify that system can support at least 4.95 million users. Planned tests, which include the simultaneous sessions test, will cost \$350,000. Since only two quizzes are scheduled a day, performance tests on the production system during the "down" times should be representative of what users experience. There is a 10% chance that the production system will not be restored in time for a quiz.

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

- A. SOAP
- B. **HTTPS**
- C. JDBC
- D. IMAP

**13.** Which metrics collecting attributes are most commonly associated with the metrics collection methods listed? 1.Scans collections of and compiles metrics based on operating system and application messages 2.Supplements reporting capabilities of another metrics collection method 3.Most likely unavailable for ongoing metricscollection after performance testing efforts have ceased 4.Collecte d metrics data align with the greatest precision to test activities

- A. Performance test tools
- B Performance monitoring tool
- C Log analysis tools

- A. 1C,2A,3B and 4B
- B. 1C, 2B, 3A and 4A
- C. 1B. 2A, 3A and 4B
- E. **1A, 2B, 3B and 4A**

**14.** 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.

A coworker has located various test plan elements under the standard PTP sections in a draft You have been asked to analyze the quality of the draft.The complete PTP draft cannot be provided here A content sampling of the PTP is provided.

Based on the content sample below, what is the quality of the draft document when only considering the alignment of content under standard PTP sections?

Draft PTP Content:	
PTP Section	PTP Content Element
Performance Test Objectives:	Business Leadership anticipates that the updated production environment will sustain 5 million concurrent users over the course of a quiz event.
Application Overview:	The quiz application backend consist of 10 modular multi-tier clusters that are load balanced to support participant responses. Each module consists of 10 web services platforms that are load balanced and submit to a high specification server cluster maintaining a 500 GB in-memory database.
Test Acceptance Criteria:	Ideally 5 million concurrent participants will be supported. However, despite rigorous engineering discipline in design and implementation anomalies will occur and los of up to 1% of sessions is acceptable throughout a quiz event. The present back-end is capable of 3.5 million concurrent users with up to a 2.5% session loss.
Testing Tools:	Fifteen ServicesDynamics load generators are located evenly across five data centers located in each of the four US regions and in Central Canada. ServiceDynamics management console located at HQ will consolidate performance data from the load generators and from the FizBin platform monitoring agents collecting memory, network and CPU utilization data across the production environment.

A. 0 misalignments, good

B. 1 misalignments, good

C. 2 misalignments good

D. 3 misalignments needs improvement

**15.** 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 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 the following is a proper load profile for the quiz 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

**16.** How does service virtualization contribute to the performance test environment?

- A. Service virtualization allows the load generators to produce more load per virtual instance.
- B. Service virtualization enables the system under test to avoid functional error conditions caused by a necessary service being unavailable at the time of the performance test.
- C. Service virtualization enables load balancers to operate in a distributed environment thereby creating a realistic emulation of a production environment when available system under test equipment is inferior to production.
- D. Service virtualization allows the database to perform as if it were loaded with a data set many times larger than is actually loaded

**17.** Which of the following performance tests commonly results in understanding an application's ability to support future increases of users or larger amounts of data without exceeding the current performance requirement?

- A. scalability test
- B. load test
- C. endurance test
- D. concurrency test

**18.** 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. An essential operational profile you identified is the quiz participant. Your operational profile discovery efforts have yielded a number of profile attributes. A 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. Given this information, what is missing to construct the operational profile for the quiz participant?

**A. The network bandwidth requirements of the video stream intermissions between questions is unknown. The network bandwidth requirements of the video stream intermissions between questions is unknown.**

B. No survey results from past quiz winners that explore how they won. No survey results from past quiz winners that explore how they won.

C. The quiz response time limit is not specified. The quiz response time limit is not specified.

D. The design maximum number of users within quiz participant user class is unknown. The design maximum number of users within quiz participant user class is unknown.

**19. Which performance testing operational activity pattern assists in identifying system functionality that may require correction or optimization?**

A. Batch requests are collections of activities a SUT performs from initiation through termination of one or more processes commonly measured for their elapsed time.

**B. Concurrency is a collection of activities a SUT performs from initiation through termination of one or more processes commonly measured for their elapsed time.**

C. Stakeholder requests are collections of activities a SUT performs from initiation through termination of one or more processes commonly measured for their elapsed time.

D. Transactions are collections of activities a SUT performs from initiation through termination of one or more processes commonly measured for their elapsed time.

**20. 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. In order to avoid cooperation among quiz participants, the answers to the multiple choice questions are listed randomly. Confidence in the game's fairness requires that a registered user originate from only one quiz client device. Every user must respond over the same short window of time in order to avoid external assistance and learning the official answer before responding. Only participants who respond correctly may answer the next question. Any activity that appears to violate expected behavior of a rule-following participant will cause the client session to be rejected. You are currently preparing test scripts to function as a quiz participant. What input data type is most critical for the test script to incorporate to ensure that the concurrency objective will be properly tested?

A. In order to properly test the concurrency objective, the test script must supply the system provided unique session ID with each answer provided.

B. In order to properly test the concurrency objective, the test script must provide a random password to the application's login system.

C. In order to properly test the concurrency objective, the test script must answer each trivia question with the same answer as every other virtual user.

D. In order to properly test the concurrency objective, the test script must present a unique user name to the application's login system.

**21.** 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. You performed 100 test runs that provided 5 million virtual concurrent users. You have measurements of participant concurrency at the last question for each test run. In your analysis, you order all the concurrency test results by measured concurrency value from best to worst. You determine 85%, 90%, 95% and 100% values by selecting the 85th, 90th, 95th and 100th (last and worst) measured values by counting list positions starting from the best value going towards the worst until you reach the desired list position (ex. 85). Keep in mind, the results in lower list positions are as good or better than the results chosen for reporting. After analyzing the results of the performance tests, you present the following results: 85% 4.92 million valid concurrent users, 90% 4.90 million valid concurrent users, 95% 4.0 million valid concurrent users, 100% 3.8 million valid concurrent users. Based on these results, what should you report to the stakeholders?

A. The performance tests clearly have failed to produce a realistic and compatible load. The results should confirm the test oracle in that the 99% of five million participants concurrency objective has been achieved. If the performance test plan had worked correctly, the reported values should have been 85% 4.95, 90% 4.95, 95% 4.95 and 100% 4.95 million valid concurrent users.

B. These results clearly show that the system update successfully supports 99% of five million participants

C. Four samples from the first fifteen ordered test results are presented. The system update performed much worse than what is presented here. The system update has failed to meet the 99% of five million participants concurrency objective.

D. If we pick 85 out of 100 test runs as the minimum level of reliability, the system update does not reliability meet the 99% of five million participants concurrency target, However not all results are as bad as these

**22.** 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 devices and 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 isolate the 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 and unreliability. v. The upgrade being tested was paid for by the latest round of venture funding. Supporting 5 million users is requirement that was a condition of their funding.

A. i, ii include iii, iv, v exclude

B. ii, iii include i, iv, v exclude

C. ii, v include i, iii, iv exclude

D. iii, iv, v include i, ii exclude

**23.** Which of the following architectures are likely to be found entirely on-premises and less likely to suffer from Internet-based network performance challenges?

i Mobile

ii Multi-tier System in. Single Computer iv. Distributed v. Dynamic

A. i, iv true ii, iii. v false

B. ii, in true i, iv, v false

C. i, ii, v true iii, iv false

D. ii, iii, v true i,i v false

**24. How Is transaction elapsed time determined?**

A. response time - think time

B. response time + think time

C. response time + think time + nest time

D. response time + think time - nest time

**25. Which tool is ideally the only source of execution burden experienced by the system under test?**

A. load generator

B. management console

C. log analysis tool

D. monitoring tool

**26. 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. The performance test team is assembling criteria for tool selection. They have identified the following criteria**

\* Must be able to reliably generate 5 million concurrent virtual quiz participants from multiple data centers with centralized control

\* Must be compatible with REST based web services and have tight integration with RESTful APIs' OData and OpenAPI.

\* Must be able to support nested transaction timers, provide centralized performance data collection and reporting, and integrate with platform monitoring agents used by the Operations team.

Which of the following criterion would best complete the provided set of criteria?

- A. Must protect undesirable performance results from being viewed from unauthorized users
- B. Must provide shellchecking that checks spelling within test script comments
- C. Must be supported with documentation, training materials, books from known publishers, and an IDE that behaves similarly to popular in-house IDEs.
- D. Must have technical and software maintenance support for product versions two major revisions behind current revision

**27.** What is normally performed within the principal performance testing activity called Test Analysis and Design?

- i. Determine scope of performance testing
- ii. Establish action plans should performance issues arise
- iii. in Create the test environment
- iv. Identify risks to the performance tests
- v. Determine load levels, timing parameters, and transactions to be tested

A. v true i, ii, m iv false

B. ii. v true i, iii, v false

C. i, iv true ii, iii, v false

D. ii, iii, v true i, iv false

**28.** Which of the following activities is a valid performance oriented static testing activity?

- A. Evaluating resource utilization of unit level test objects
- B. Testing end-to-end behaviors under various load conditions.
- C. Applying use cases and workflows as features are integrated
- D. Modeling of system resource requirements and/or behavior using spreadsheets or capacity planning tools

**29.** What is the order of architectures that introduce the least to most performance instability?

- A. Mobile
- B. Multi-tier System
- C. Single Computer
- D. A,B,C

E. B,C,A

F. C,A,B

G. C,B,A

**30.** What is normally performed within the principal performance testing activity called Test Planning and Control?

i.Determine scope of performance testing

ii.Organize test cases into performance test procedures

iii.Create the test environment

iv. Identify risks to the performance tests

v. Determine load levels, timing parameters, and transactions to be tested

A. iii true i, ii, iv, v false

B. i, iv true ii, iii, v false

**C. i, ii, v true iii, iv false**

D. iii, iv, v true i, ii false

**31.** Which of the following performance tests should we use to determine if an application meets performance expectations under typical realistic loads?

A. spike test

B. stress test

C. scalability test

**D. load test**

**32.** 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 What is the best way to address the performance testing for concurrency?

**A. Review the asynchronous session management algorithm, review the production systems implementation including load balancing and m-memory database schema, and conduct performance tests on these production systems while there are no active quiz events.**

- B. Conduct a network assessment of popular mobile data providers to ensure excessive frame loss and latency do not cause more than 15% of trivia answer arrivals to occur outside acceptable arrival time.
- C. Enable and schedule the quiz app to act as a virtual user on users' mobile devices while the production system is in-between quiz events. This will ensure realistic end-to-end testing
- D. Conduct performance tests on production systems while there are no active quiz events

**33.** Which of the following is a valid reason for aggregating performance test results?

- A. Business stakeholders work with detailed technical status indicators when evaluating an application's performance
- B. Business stakeholders can evaluate an application's overall performance status.
- C. Technical stakeholders work with aggregated data when isolating causes of performance problems
- D. Technical stakeholders work with detailed technical status indicators when evaluating an application's performance

**34.** 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. In order to avoid cooperation among quiz participants, the answers to the multiple choice questions are listed randomly. Confidence in the game's fairness requires that a registered user originate from only one quiz client device. Every user must respond over the same short window of time in order to avoid external assistance and learning the official answer before responding. Only participants who respond correctly may answer the next question. Any activity that appears to violate expected behavior of a rule-following participant will cause the client session to be rejected. You are developing test script code that handles quiz question responses. To do this you need to ensure that the script emulates the production quiz app client's logic in terms of rule following and client-backend interface specification. Based on the question description provided, which is one test script behavior you would implement in order to ensure the test script successfully delivers the operational and load profile of a quiz participant?

- A. Recognize whether the previous question response was correct
- B. Set the device identifier as a constant to ensure all virtual user instances use the set value
- C. Randomly select the maximum think time limit used to delay question responses.
- D. Use the date-time clock in order to submit question responses on a synchronized schedule with each instance

**35.** 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

**36.** 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.

**37.** During design discussions the performance test team observed that database stored procedures for several popular use cases may be badly coded. Which of the following common performance failures would best confirm the team's concern was justified?

- A. Slow response under all load levels
- B. Slow response under moderate-to-heavy load levels
- C. Degraded response over time
- D. Inadequate or graceless error handling under heavy or over-limit load

**38.** Which of the following lists of attributes characterize load generation using crowds?

- A. uses API to produce load, repeatable. small number of testers
- B. end-to-end test, not repeatable. large number of testers
- C. end-to-end test, repeatable small number of testers
- D. uses API to produce load, not repeatable. large number of testers

**39.** What test script operating conditions are risks to a performance test's validity?

- i. Record insertions align with transaction objective



- ii. Component failure within the system under test
- iii. Load generator produces low load level
- iv. Database log remains synchronized with load generators time source
- v. Virtual users authenticate with distinct IDs

A. i, iii true ii, iv, v false

B. ii, iii true i, iv, v false

C. ii, v true i, iii, iv false

D. iv, v true i, ii, iii false

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

A. load test

B. scalability test

C. spike test

D. concurrency test

**41.** 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. An essential operational profile you identified is the quiz participant. Your operational profile discovery efforts have yielded a number of profile attributes. A 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. After making the following assumptions:

1. Questions must be responded to within a four second window;
2. Question responses will be sent evenly across this window of time (resulting in an average responder time of two seconds);
3. The designed maximum number of concurrent users will attempt the first question;
4. There will be no functional issues when handling the load.
5. The average time from response reception to database commitment is 1000 milliseconds under maximum concurrent usage.

What is the approximate maximum average system throughput if that assumptions hold?

- A. 1.667 million transactions/second
- B. 1 million transactions/second**
- C. 1 million transactions/millisecond
- D. 200.000 transactions/second

**42.** Server virtualization has improved deployment speed and operating-cost efficiency for many IT applications.

Which of the following architectures are very likely to utilize server virtualization that potentially suffers from performance challenges related to common host hardware resources being burdened by virtualized servers unrelated to the application under performance test?

- i Multi-tier System
- ii. Mobile
- iii.in Single Computer
- iv.Distributed v.Cloud-based

A. i, ii, iii true iv,iv false

**B. i, iv, v true ii, iii false**

C. ii, iv, v true i, iii false

D. iii, iv, v true i, ii false