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| **K1- Q. 1: Which option is part of the implementation and execution area of the fundamental test process?**  A. Developing the tests. B. Comparing actual and expected results. C. Writing a test summary. D. Analysing lessons learnt for future releases.  **Explanation in favor of the correct answer**  A. is part of Analysis and design  C. is part |
| of Evaluating exit criteria and reporting  D. is part of Test closure activities  **<<<<<< =================== >>>>>>**  **K1- Q. 2: The five parts of the fundamental test process have a broad chronological order. Which of the options gives three different parts in the correct order?**  A. Implementation and execution, planning and control, analysis and design.  B. Analysis and design, evaluating exit criteria and reporting, test closure activities.  C. Evaluating exit criteria and reporting, implementation and execution, analysis and design.  D. Evaluating exit criteria and reporting, test closure activities, analysis and design.  **Explanation in favor of the correct answer**  All other answers have at least one stage of the fundamental test process in the wrong sequence.  **<<<<<< =================== >>>>>>**  **K1-** **Q. 3: Which statement is most true?**  A. Different testing is needed depending upon the application.  B. All software is tested in the same way.  C. A technique that finds defects will always find defects.  D. A technique that has found no defects is not useful.  **Explanation in favor of the correct answer**  This is a restatement of the testing principle Testing is context dependent  **<<<<<< =================== >>>>>>**  **K1-** **Q. 4: A bug or defect is:**  A. A mistake made by a person; B. A run-time problem experienced by a user; C. The result of an error or mistake; D. The result of a failure, which may lead to an error?  **<<<<<< =================== >>>>>>**  **K1-** **Q. 5: The effect of testing is to:**  A. Increase software quality; B. Give an indication of the software quality; C. Enable those responsible for software failures to be identified; D. Show there are no problems remaining?  **<<<<<< =================== >>>>>>**  **K1-** **Q. 6: What is retesting?**  A. Running the same test again in the same circumstances to reproduce the problem.  B. A cursory run through a test pack to see if any new errors have been introduced.  C. Checking that the predetermined exit criteria for the test phase have been met.  D. Running a previously failed test against new software/data/documents to see if the problem is solved.  **<<<<<< =================== >>>>>>**  **K1-** **Q. 7: Which of the following is correct?**  **Debugging is:**  A. Testing/checking whether the software performs correctly.  B. Checking that a previously reported defect has been corrected.  C. Identifying the cause of a defect, repairing the code and checking the fix is correct.  D. Checking that no unintended consequences have occurred as a result of a fix.  **Explanation in favor of the correct answer**  A. Is a brief definition of testing.  B. Is retesting.  D. Is regression testing.  **<<<<<< =================== >>>>>>**  **K1-** **Q. 8: When is testing complete?**  A. When time and budget are exhausted.  B. When there is enough information for sponsors to make an informed decision about release.  C. When there are no remaining high priority defects outstanding.  D. When every data combination has been exercised successfully.  **Explanation in favor of the correct answer**  Sometimes time/money does signify the end of testing, but it is really complete when everything that was set out in advance has been achieved.  **<<<<<< =================== >>>>>>**  **K1- Q.** **9: Which list of levels of tester independence is in the correct order, starting with the most independent first?**  A. Tests designed by the author; tests designed by another member of the development team; tests designed by someone from a different company.  B. Tests designed by someone from a different department within the company; tests designed by the author; tests designed by someone from a different company.  C. Tests designed by someone from a different company; tests designed by someone from a different department within the company; tests designed by another member of the development team.  D. Tests designed by someone from a different department within the company; tests designed by someone from a different company; tests designed by the author.  **Explanation in favor of the correct answer**  This option has someone nearer to the written code in each statement. All other options are not in this order.  **<<<<<< =================== >>>>>>**  **K1-** **Q. 10: Which of the following is in the correct order (typically)?**  A. Unit testing, system testing, acceptance testing, maintenance testing.  B. System testing, unit testing, acceptance testing, maintenance testing.  C. Acceptance testing, system testing, maintenance testing, unit testing.  D. Unit testing, maintenance testing, system testing, acceptance testing. |

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| **K1- Q. 11: Which of the following is usually the test basis for integration testing?**  A. Program specification B. Functional specification C. Technical specification D. Requirement specification  **Explanation in favor of the correct answer**  Option (A) is used for unit testing.  Option (B) is used for system testing and  Option (D) |
| is used for acceptance testing.  **<<<<<< =================== >>>>>>**  **K1- Q. 12: Which of the following are examples of iterative development models?**  (i) V-model  (ii) Rapid Application Development model  (iii) Waterfall model  (iv) Agile development model  A. (i) and (ii) B. (ii) and (iii) C. (ii) and (iv) D. (iii) and (iv)  **Explanation in favor of the correct answer**  The other two models are sequential models.  **<<<<<< =================== >>>>>>**  **K1- Q. 13: Which of the following is not true of regression testing?**  A. It can be carried out at each stage of the life cycle.  B. It serves to demonstrate that the changed software works as intended.  C. It serves to demonstrate that software has not been unintentionally changed.  D. It is often automated.  **Explanation in favor of the correct answer**  This is a definition of confirmation testing. The other three options are true of regression testing.  **<<<<<< =================== >>>>>>**  **K1- Q. 14: One of the roles in a review is that of moderator, which of the following best describes this role?**  A. Plans the review, runs the review meeting and ensures that follow-up activities are completed.  B. Allocates time in the plan, decides which reviews will take place and that the benefits are delivered.  C. Writes the document to be reviewed, agrees that the document can be reviewed, and updates the document with any changes.  D. Documents all issues raised in the review meeting, records problems and open points.  **<<<<<< =================== >>>>>>**  **K1- Q. 15: What do static analysis tools analyze?**  A. Design B. Test cases C. Requirements D. Program code  **<<<<<< =================== >>>>>>**  **K1- Q. 16: Which of the following is most likely to be a benefit of using static techniques?**  A. Fewer performance defects. B. Productivity improvements in the development process. C. More efficient regression testing. D. Quick return on investment in static analysis tools.  **Explanation in favor of the correct answer**  Although the other options might be seen as benefits they are not amongst the most likely benefits. Option (B) is the benefit that is most likely to be realized.  **<<<<<< =================== >>>>>>**  **K1- Q. 17: Which of the following are static techniques?**  A. Walkthrough. B. State transition testing. C. Decision table testing. D. Statement testing.  **Explanation in favor of the correct answer**  Options (B), (C) and (D) are all dynamic test techniques.  **K1- Q. 18: Which one of the following roles is typically used in a review?**  A. Champion. B. Author. C. Project sponsor. D. Custodian.  **Explanation in favor of the correct answer**  The Author is the only role that is typically used in a review.  A Champion might sponsor the review process but is not a defined role within an actual review; a Project Sponsor, if technically competent, might be asked to play a defined role within the review process, but whilst using that role they will not be a Project Sponsor; finally, a Custodian might ensure the results are stored safely but would not be involved in the actual review itself.  **K1- Q. 19: Which of the following defines the expected result of a test?**  A. Test case B. Test procedure C. Test execution schedule D. Test condition  **K1- Q. 20: Which of the following describes structure-based (white-box) test case design techniques?**  A. Test cases are derived systematically from models of the system.  B. Test cases are derived systematically from the tester's experience.  C. Test cases are derived systematically from the delivered code.  D. Test cases are derived from the developers' experience.  **Explanation in favor of the correct answer**  Answer (A) relates to specification-based testing, answer (B) relates to experience-based testing and answer (D) could relate either to debugging or to experience-based techniques. |

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| **K1- Q. 21: Which of the following is a structure-based (white-box) technique?**  A. Decision table testing B. State transition testing C. Statement testing D. Boundary value analysis  **Explanation in favor of the correct answer**  All other options are specification-based (black-box) techniques, and the main distracter is answer (A) because decision table testing could be confused with decision testing. |
| K1- Q. 22: What is the main purpose of use case testing?  A. To identify defects in process flows related to typical use of the system.  B. To identify defects in the connections between components.  C. To identify defects in the system related to extreme scenarios.  D. To identify defects in the system related to the use of unapproved programming practices.  **Explanation in favor of the correct answer**  Answer (B) relates to integration testing; answer (C) could relate to boundary value analysis or performance testing, but use cases exercise typical process flows rather than extreme examples; answer (D) relates to static analysis.  **K1- Q. 23: What is the purpose of exit criteria?**  A. To identify how many tests to design. B. To identify when to start testing. C. To identify when to stop testing. D. To identify who will carry out the test execution.  **K1- Q. 24: What can a risk-based approach to testing provide?**  A. The types of test techniques to be employed. B. The total tests needed to provide 100 per cent coverage. C. An estimation of the total cost of testing. D. Only that test execution is effective at reducing risk.  **K1- Q. 25: When assembling a test team to work on an enhancement to an existing system, which of the following has the highest level of test independence?**  A. A business analyst who wrote the original requirements for the system.  B. A permanent programmer who reviewed some of the new code, but has not written any of it.  C. A permanent tester who found most defects in the original system.  D. A contract tester who has never worked for the organization before.  **Explanation in favor of the correct answer**  In this scenario, the contract tester who has never worked for the organization before has the highest level of test independence. The three others are less independent as they are likely to make assumptions based on their previous knowledge of the requirements, code and general functionality of the original system.  Note that independence does not necessarily equate to most useful. In practice most test or project managers would recruit a permanent tester who has worked on the original system in preference to a contract tester with no knowledge of the system. However, when assembling a team it would be useful to have staff with varying levels of test independence and system knowledge.  **K1- Q. 26: Which of the following terms is used to describe the management of software components comprising an integrated system?**  A. Configuration management B. Incident management C. Test monitoring D. Risk management  **Explanation in favor of the correct answer**  Incident management is the collection and processing of incidents raised when errors and defects are discovered. Test monitoring identifies the status of the testing activity on a continuous basis. Risk management identifies, analyses and mitigates risks to the project and the product. Configuration management is concerned with the management of changes to software components and their associated documentation and testware.  **K1- Q. 27: A new system is about to be developed. Which of the following functions has the highest level of risk?**  A. Likelihood of failure = 20%; impact value = 100,000  B. Likelihood of failure = 10%; impact value = 150,000  C. Likelihood of failure = 1%; impact value = 500,000  D. Likelihood of failure = 2%; impact value = 200,000  **Explanation in favor of the correct answer**  In (B) the product of probability impact has the value 15,000; in (C) the value is 5,000 and in (D) it is 4,000. The value of 20,000 in (A) is therefore the highest.  **K1- Q. 28: Which of the following statements about risks is most accurate?**  A. Project risks rarely affect product risk.  B. Product risks rarely affect project risk.  C. A risk-based approach is more likely to be used to mitigate product rather than project risks.  D. A risk-based approach is more likely to be used to mitigate project rather than product risks.  **Explanation in favor of the correct answer**  In general, project risk and product risk can be hard to differentiate. Anything that impacts on the quality of the delivered system is likely to lead to delays or increased costs as the problem is tackled. Anything causing delays to the project is likely to threaten the delivered system's quality. The risk-based approach is an approach to managing product risk through testing, so it impacts most directly on product risk.  **K1- Q. 29: For which of the following activities in the fundamental test process would an incident management tool be most useful?**  A. Test planning and control B. Test analysis and design C. Test implementation and execution D. Evaluating exit criteria and reporting  **Explanation in favor of the correct answer**  Incident management tools are most useful during test implementation and execution as this is the stage at which the tool is used to raise, manage, retest and close incidents.  The data collected during the defect life cycle can then be manipulated into information that is useful for other activities within the fundamental test process.  Information on numbers of defects outstanding may be useful for evaluating exit criteria (option (D)). This information could also be used for planning future testing and for taking control (option (A)).  Incident management tools can also assist in test analysis and design (option (B)) as information about defects found when testing the previous release of the system could be used when analyzing the type of testing required for the next enhancement.  **K1- Q. 30: Which of the following defects is most likely to be found by a test harness?**  A. Variance from programming standards. B. A defect in middleware. C. Memory leaks. D. Regression defects.  **Explanation in favor of the correct answer**  Variance from programming standards defects (option (A)) are found during the review or static testing process. Therefore a test harness is unlikely to find a defect in programming standards.  Memory leak defects (option (C)) could potentially be found by a test harness designed to run many test cases.  Regression defects (option (D)) could be found using many types of test tool.  Defects in middleware (option (B)) are generally more likely to be found by a test harness or a dynamic analysis tool than by any other type of tool. |

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| **K1- Q. 31: A test management tool is most likely to integrate with which of the following tools?**  A. Performance testing tool B. Test data preparation tool C. Static analysis tool D. Requirements management tool  **Explanation in** |
| Requirements management tools (option (D)) often have interfaces with test management tools. In some cases they will be sold as a package or in other cases a test management tool may have its own requirements module. The use of such interfaces or integrated packages aids traceability from requirements through to test scripts and defects.  Performance management tools (option (A)), test data preparation tools (option (B)) and static analysis tools (option (C)) are unlikely to have an interface or be integrated with a test management tool. They serve different purposes and therefore there is little need for such interfaces.  **K2- Q. 32: Which of the following are aids to good communication, and which hinder it?**  i. Try to understand how the other person feels.  ii. Communicate personal feelings, concentrating upon individuals.  iii. Confirm the other person has understood what you have said and vice versa.  iv. Emphasise the common goal of better quality.  v. Each discussion is a battle to be won.  A. (i), (ii) and (iii) aid, (iv) and (v) hinder.  B. (iii), (iv) and (v) aid, (i) and (ii) hinder.  C. (i), (iii) and (iv) aid, (ii) and (v) hinder.  D. (ii), (iii) and (iv) aid, (i) and (v) hinder.  **<<<<<< =================== >>>>>>**  **K2- Q. 33: Which pair of definitions is correct?**  A. Regression testing is checking that the reported defect has been fixed; retesting is testing that there are no additional problems in previously tested software.  B. Regression testing is checking there are no additional problems in previously tested software; retesting enables developers to isolate the problem.  C. Regression testing involves running all tests that have been run before; retesting runs new tests.  D. Regression testing is checking that there are no additional problems in previously tested software, retesting is demonstrating that the reported defect has been fixed.  **Explanation in favor of the correct answer**  Regression testing is testing that nothing has regressed. Retesting (or confirmation testing) confirms the fix is correct by running the same test after the fix has been made. No other option has both of these as true.  **<<<<<< =================== >>>>>>**  **K2- Q. 34: The following statements relate to activities that are part of the fundamental test process.**  i. Evaluating the testability of requirements.  ii. Repeating testing activities after changes.  iii. Designing the test environment set-up.  iv. Developing and prioritizing test cases.  v. Verifying the environment is set up correctly.  Which statement below is TRUE?  A. (i) and (ii) are part of analysis and design, (iii), (iv) and (v) are part of test implementation and execution.  B. (i) and (iii) are part of analysis and design, (ii), (iv) and (v) are part of test implementation and execution.  C. (i) and (v) are part of analysis and design, (ii), (iii) and (iv) are part of test implementation and execution.  D. (i) and (iv) are part of analysis and design, (ii), (iii) and (v) are part of test implementation and execution.  **Explanation in favor of the correct answer**  All other answers contain an activity identified as analysis and design that is part of implementation and test execution.  **<<<<<< =================== >>>>>>**  **K2- Q. 35: Which statement correctly describes the public and profession aspects of the code of ethics?**  A. Public: Certified software testers shall act in the best interests of their client and employer (being consistent with the wider public interest). Profession: Certified software testers shall advance the integrity and reputation of their industry consistent with the public interest.  B. Public: Certified software testers shall advance the integrity and reputation of the profession consistent with the public interest. Profession: Certified software testers shall consider the wider public interest in their actions.  C. Public: Certified software testers shall consider the wider public interest in their actions. Profession: Certified software testers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of their profession.  D. Public: Certified software testers shall consider the wider public interest in their actions. Profession: Certified software testers shall advance the integrity and reputation of their industry consistent with the public interest.  **Explanation in favor of the correct answer**  All the answers reflect the definition of two of the items from the code of ethics, and care must be taken in searching for the Public item because public or public interest are used in several of the eight items in the code. The key is that public is the main item, rather than a subsidiary. In the order given in the options, A. reflects Client and employer and Profession while B. gives Profession and Public (the correct choices, but the wrong way round). Option C. gives Public and Self, leaving the last option D. to give Public and Profession.  **<<<<<< =================== >>>>>>**  **K2- Q. 36: Which of the following is true about the V-model?**  A. It has the same steps as the waterfall model for software development.  B. It is referred to as a cyclical model for software development.  C. It enables the production of a working version of the system as early as possible.  D. It enables test planning to start as early as possible.  **<<<<<< =================== >>>>>>**  **K2- Q. 37: Which of the following is true of iterative development?**  A. It uses fully defined specifications from the start.  B. It involves the users in the testing throughout.  C. Changes to the system do not need to be formally recorded.  D. It is not suitable for developing websites.  **<<<<<< =================== >>>>>>**  **K2- Q. 38: A top-down development strategy affects which level of testing most?**  A. Component testing B. Integration testing C. System testing D. User acceptance testing  **Explanation in favor of the correct answer**  The development strategy will affect the component testing (option (A)), in so far as it cannot be tested unless it has been built. Options (C) and (D) require the system to have been delivered; at these points the development strategy followed is not important to the tester. Option (B) needs knowledge of the development strategy in order to determine the order in which components will be integrated and tested.  **<<<<<< =================== >>>>>>**  **K2- Q. 39: Which of the following is a non-functional requirement?**  A. The system will enable users to buy books.  B. The system will allow users to return books.  C. The system will ensure security of the customer details.  D. The system will allow up to 100 users to log in at the same time.  **Explanation in favor of the correct answer**  The other options are functional requirements. Note that security is regarded as a functional requirement in this syllabus.  **<<<<<< =================== >>>>>>**  **K2- Q. 40: Which of the following statements are true?**  (i) For every development activity there is a corresponding testing activity.  (ii) Each test level has the same test objectives.  (iii) The analysis and design of tests for a given test level should begin after the corresponding development activity.  (iv)Testers should be involved in reviewing documents as soon as drafts are available in the development life cycle.  A. (i) and (ii) B. (iii) and (iv) C. (ii) and (iii) D. (i) and (iv)  **Explanation in favor of the correct answer**  Option (ii) is incorrect: each test level has a different objective.  Option (iii) is also incorrect: test analysis and design should start once the documentation has been completed. |

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| **K2- Q. 51: Which of the following is most likely to cause failure in the implementation of a test tool?**  A. Underestimating the demand for a tool. B. The purchase price of the tool. C. No agreed requirements for the tool. D. The cost of resources to implement and maintain the tool. |
| K2- Q. 52: What benefits do static analysis tools have over test execution tools?  A. Static analysis tools find defects earlier in the life cycle.  B. Static analysis tools can be used before code is written.  C. Static analysis tools test that the delivered code meets business requirements.  D. Static analysis tools are particularly effective for regression testing.  **<<<<<< =================== >>>>>>**  **K2- Q. 53: Which of the following principles should be followed when introducing a test tool into an organization?**  (i) Assessing organizational maturity to establish whether a tool will provide expected benefits.  (ii) Requiring a quick payback on the initial investment.  (iii) Including a requirement for the tool to be easy to use without having to train unskilled testers.  (iv) Identifying and agreeing requirements before evaluating test tools.  A. (i) and (ii) B. (i) and (iv) C. (ii) and (iii) D. (iii) and (iv)  **Explanation in favor of the correct answer**  Assessing organizational maturity (i) is very important when deciding whether to introduce a test tool, as implementing a tool in an immature test organization with poor processes is unlikely to produce any benefits.  A quick return on the initial investment (ii) in a test tool is rare.  Having a requirement that a tool should be easy to use for untrained and unskilled testers (iii) is generally a false hope. This is comparable with expecting someone who has never driven a car to be able to drive safely and effectively.  Agreeing requirements before evaluating tools (iv) is essential. Not to do so would be comparable with building and testing a system without requirements.  In conclusion, (i) and (iv) are good principles to follow when introducing a tool and (ii) and (iii) are not.  **<<<<<< =================== >>>>>>**  **K2- Q. 54: How can test execution tools be of most benefit during exploratory testing?**  A. They can record user actions so that defects are easier to recreate.  B. They can be used to perform the regression aspects of exploratory testing.  C. They can help to mitigate the risk of low test coverage.  D. They can use data-driven tests to increase the amount of exploratory testing performed.  **Explanation in favor of the correct answer**  Exploratory testing is used when it is unclear what the system is supposed to do. Therefore test execution tools are of little use because expected results cannot be predicted.  However, the record feature of a test execution tool can be used to log the actions performed so that defects can be recreated (option (A)) and rectified more easily.  **<<<<<< =================== >>>>>>**  **K2- Q. 55: Which of the following types of test tool are most likely to include traceability functions?**  (i) Performance testing tool (ii)Requirements management tool (iii)Configuration management tool (iv)Static analysis tool  A. (i) and (ii) B. (i) and (iv) C. (ii) and (iii) D. (iii) and (iv)  **Explanation in favor of the correct answer**  Requirements management tools (ii) have traceability because they enable test conditions and subsequently test scripts and defects to be traced back to requirements. Configuration management tools (iii) also need to trace the appropriate version of a test script to the release or version of a system or module.  Performance monitoring tools (i) and static analysis tools (iv) are designed for specific objectives. Neither of these tools particularly need traceability functions.  **<<<<<< =================== >>>>>>**  **K3 Level Questions**  **K3- Q. 56: A system is designed to accept values of examination marks as follows:**  Fail :0�39 inclusive Pass :40�59 inclusive Merit :60�79 inclusive Distinction :80�100 inclusive  In which of the following sets of values are all values in different equivalence partitions?  A. 25, 40, 60, 75 B. 0, 45, 79, 87 C. 35, 40, 59, 69 D. 25, 39, 60, 81  **<<<<<< =================== >>>>>>**  **K3 - Q. 57: A washing machine has three temperature bands for different kinds of fabrics: fragile fabrics are washed at temperatures between 15 and 30 degrees Celsius; normal fabrics are washed at temperatures between 31 and 60 degrees Celsius; heavily soiled and tough fabrics are washed at temperatures between 61 and 100 degrees Celsius.**  Which of the following contains only values that are in different equivalence partitions?  A. 15, 30, 60 B. 20, 35, 60 C. 25, 45, 75 D. 12, 35, 55  **Explanation in favor of the correct answer**  Answer (A) includes two values from the lower partition, answer (B) contains two values from the second partition, answer (D) contains one value that is invalid (out of range).  **<<<<<< =================== >>>>>>**  **K3 - Q. 58: Consider the following pseudo code:**  1 Begin 2 Read Time 3 If Time < 12 Then 4 Print(Time, "am") 5 Endif 6 If Time > 12 Then 7 Print(Time −12, "pm") 8 Endif 9 If Time = 12 Then 10 Print (Time, "noon") 11 Endif 12 End  How many test cases are needed to achieve 100 per cent decision coverage?  A. 1 B. 2 C. 3 D. 4  **Explanation in favor of the correct answer**  The three decisions are in sequence and the conditions are all mutually exclusive (if any one is true the others must be false). Hence a test case that makes the first decision true will make the second and third decisions false and so on.  So test case 1 (say Time = 6) would exercise the path True, False, False, test case 2 (say Time = 15) would exercise the path False, True, False. Test case 3 would have to be Time = 12. This combination achieves 100 per cent decision coverage because each decision has been exercised through its true and its false outcomes.  **<<<<<< =================== >>>>>>**  **K4 Level Questions**  **K4 - Q. 59: Consider the following pseudo code:**  1 Begin 2 Read Time 3 If Time < 12 Then 4 Print(Time, "am") 5 Endif 6 If Time > 12 Then 7 Print(Time −12, "pm") 8 Endif 9 If Time = 12 Then 10 Print (Time, "noon") 11 Endif 12 End  If the test cases Time = 11 and Time = 15 were input, what level of decision coverage would be achieved?  A. 100% or 6/6 B. 50% or 3/6 C. 67% or 4/6 D. 83% or 5/6  **Explanation in favor of the correct answer**  Test case 1 exercises the decision outcomes True, False, False  Test case 2 exercises the decision outcomes False, True, False  This leaves the True outcome of decision 3 not exercised.  Of the 6 possible decision outcomes, 5 have been exercised, so the decision coverage is 5/6 (about 83%).  **<<<<<< =================== >>>>>>**  **K4 - Q. 60: A software component has the code shown below:**  Program BiggestA,  Biggest: Integer Begin Read A Biggest = 10 While A > 0 Do If A > Biggest Then Biggest = A Endif Read A Enddo End  The component has exit criteria for component testing that include 100% statement coverage. Which of the following test cases will satisfy this criterion?  A. 0 B. 10, 0 C. 10, 5, 0 D. 10, 11, 0 |