# Certified Tester
# Advanced Level
# Test Analyst (CTAL-TA)
# Sample Exam – Answers

*v4.0*

Compatible with Syllabus v4.0

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International Software Testing Qualifications Board

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# Acknowledgements

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# Revision History

| Version | Date | Remarks |
|---|---|---|
| v4.0 | 2025/05/02 | Major update with overall revision and scope update |
| v2.6 | 2021/09/29 | Updated the purpose of document. Correction to answers: #4, #5, #7, #8, #9, #10, #11, #12, and #13 |
| v2.5 | 2021/05/28 | Minor correction to answer: #11, and #13 |
| v2.4 | 2021/05/21 | Update of Copyright Notice. Minor correction to answers: #11, #12, #13, #16, #18, #26, and #37 |
| v2.3 | 2021/03/03 | Updated according to CTAL-TA v3.1.0 update. Questions 10 and 11 replaced according to the changed Syllabus contents. Updates to majority of the answers |
| v2.2 | unpublished | New template applied |
| v2.1 | 2019/12/19 | Revisions made by AELWG to enable launch |
| v2.0 | 2019/10/05 | Release of sample exam for CTAL-TA 2019 |
| v1.3 | 2019/02/19 | Minor correction of answer option labels. Correcting of Pick-N type answers |
| v1.2 | 2018/12/05 | Split of document into Questions and Answers. Randomize answer order. Refactor layout on Sample Exam Template. Correcting of Pick-N type answers. Correcting of answer #16 and #17. Remove broken answer #15 (and renumbering) |
| v1.01 | 2012/11/23 | Version for release |
| v1.00 | 2012/10/19 | Version for voting |


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# Introduction

## Purpose of this document

The example questions and answers and associated justifications in this sample exam have been created by a team of subject matter experts and experienced question writers with the aim of:

- Assisting ISTQB® Member Boards and Exam Boards in their question writing activities
- Providing training providers and exam candidates with examples of exam questions

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

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

## Instructions

In this document you may find:

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

Questions are contained in a separate document


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# Answer Key

| Question Number (#) | Correct Answer | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|
| **1** | d | TA-1.1.1 | K2 | 1 |
| **2** | b | TA-1.2.2 | K2 | 1 |
| **3** | c | TA-1.2.3 | K2 | 1 |
| **4** | d | TA-1.3.3 | K2 | 1 |
| **5** | a | TA-1.3.4 | K2 | 1 |
| **6** | a | TA-1.3.5 | K2 | 1 |
| **7** | c | TA-1.3.6 | K3 | 2 |
| **8** | d | TA-1.3.7 | K2 | 1 |
| **9** | a, d | TA-2.1.1 | K2 | 1 |
| **10** | b | TA-2.2.1 | K4 | 3 |
| **11** | a, d | TA-2.2.1 | K4 | 3 |
| **12** | a | TA-3.1.1 | K3 | 2 |
| **13** | c | TA-3.1.1 | K3 | 2 |
| **14** | c | TA-3.1.2 | K3 | 2 |
| **15** | a | TA-3.1.2 | K3 | 2 |
| **16** | c | TA-3.1.3 | K2 | 1 |
| **17** | a | TA-3.2.1 | K2 | 1 |
| **18** | d | TA-3.2.2 | K3 | 2 |
| **19** | b | TA-3.2.2 | K3 | 2 |
| **20** | c | TA-3.2.3 | K3 | 2 |
| **21** | a | TA-3.2.3 | K3 | 2 |
| **22** | d | TA-3.3.1 | K3 | 2 |
| **23** | b | TA-3.3.1 | K3 | 2 |
| **24** | c | TA-3.3.2 | K3 | 2 |
| **25** | d | TA-3.3.2 | K3 | 2 |
| **26** | d | TA-3.4.1 | K3 | 2 |

| Question Number (#) | Correct Answer | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|
| **27** | c | TA-3.4.1 | K3 | 2 |
| **28** | a | TA-3.4.2 | K3 | 2 |
| **29** | c, d | TA-3.4.2 | K3 | 2 |
| **30** | b | TA-3.4.3 | K2 | 1 |
| **31** | b, e | TA-3.5.1 | K4 | 3 |
| **32** | b, d | TA-3.5.1 | K4 | 3 |
| **33** | a | TA-3.5.2 | K2 | 1 |
| **34** | b | TA-4.1.1 | K2 | 1 |
| **35** | d | TA-4.2.1 | K2 | 1 |
| **36** | d | TA-4.3.1 | K2 | 1 |
| **37** | b | TA-4.4.1 | K2 | 1 |
| **38** | a | TA-5.1.1 | K2 | 1 |
| **39** | a | TA-5.2.1 | K3 | 2 |
| **40** | d | TA-5.2.1 | K3 | 2 |
| **41** | d | TA-5.2.2 | K3 | 2 |
| **42** | c | TA-5.2.2 | K3 | 2 |
| **43** | b | TA-5.3.1 | K4 | 3 |
| **44** | c | TA-5.3.1 | K4 | 3 |
| **45** | c | TA-5.3.2 | K2 | 1 |


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# Answers

| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **1** | d | a) Is not correct. In incremental development models, development is not necessarily cyclical.<br>b) Is not correct. The test analyst usually needs to perform test analysis, design, implement, and execute tests for each increment.<br>c) Is not correct. The test analyst's work may be organized differently for each increment. Therefore, the initial time of involvement of the test analyst may vary for each increment.<br>d) Is correct. Each increment is developed and tested independently. Therefore, the test analyst performs the same test activities for each increment (i.e., test analysis, test design, test implementation, and test execution). | TA-1.1.1 | K2 | 1 |
| **2** | b | a) Is not correct. Test conditions are defined during test analysis.<br>b) Is correct. During test design, the test analyst determines in which areas low-level test cases or high-level test cases are appropriate. Indicating specific amounts is low-level while indicating whether the discount is applied is high-level.<br>c) Is not correct. Test data is created and prepared for test execution during test implementation.<br>d) Is not correct. Test scripts are written during test implementation. | TA-1.2.2 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **3** | c | a) Is not correct. In test analysis, the TA defines test conditions, but no test scripts.<br>b) Is not correct. In test design, the TA designs test cases. In this action, the test case is already given.<br>c) Is correct. A test script implements a test case during test implementation.<br>d) Is not correct. Test scripts are an input to test execution, not an outcome. | TA-1.2.3 | K2 | 1 |
| **4** | d | a) Is not correct. A reference to the existing interface specification is sufficient and already included in the first requirement item.<br>b) Is not correct. The third requirement item already indicates that the simulator is needed during test implementation and execution. The specific time periods can be derived from the test schedule.<br>c) Is not correct. Backup and restore procedures are overarching needs of the test environment. Individual components like the health card simulator do not need specific backup and restore procedures.<br>d) Is correct. The responsibility for making the simulator available is one of the needed information items listed in the syllabus. | TA-1.3.3 | K2 | 1 |
| **5** | a | a) Is correct. The legacy system was developed independently to fulfill the same specifications, so it can serve as a ready-made pseudo-oracle.<br>b) Is not correct. Restricting the test oracle to simple data and letting everything else pass is not an appropriate approach to testing for functional correctness. Complex test cases often induce high risk.<br>c) Is not correct. This is property-based testing because it only verifies the consistency of inputs and outputs, not the complete correctness of the test results.<br>d) Is not correct. This is metamorphic testing. | TA-1.3.4 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **6** | a | a) Is correct. Anonymized data comes from production data, which may lack the variability required for thorough testing of various scenarios, including negative testing.<br>b) Is not correct. Anonymized data comes from production data, and production data is not limited to input data. It can also contain, for example, expected results and configuration data.<br>c) Is not correct. There is no direct connection between anonymization and time sensitivity or data aging.<br>d) Is not correct. Anonymized production data may be used as values for keyword parameters rather than keywords themselves. Keywords are usually defined based on business processes, not on anonymized production data. | TA-1.3.5 | K2 | 1 |
| **7** | c | i) Is not correct. The verification is wrong because the remaining element is B, not A.<br>ii) Is not correct. The verification uses the keyword “AssertNonempty()” which is not available. It must be specified before using it.<br>iii) Is correct. The test script inserts an element A, it removes it, and then inserts a second element B. So, the queue is not empty and contains element B, which is verified by the assertion<br>iv) Is not correct. The verification is correct, but the test verifies that the queue is empty if the number of inserted elements equals the number of removed elements, which is not what the acceptance criterion says.<br>v) Is correct. The test script inserts two elements, A and B, first. Then, it removes one, so after this removal, the queue is not empty and contains element B, which is verified by the assertion AssertFirstElement(B). This verifies the acceptance criterion. | TA-1.3.6 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **8** | d | a) Is not correct. A severity classification supports defect management rather than the test management tool. Setting up defect management is the responsibility of the test manager.<br>b) Is not correct. A pseudonymization procedure supports test data management rather than the test management tool.<br>c) Is not correct. Managing the configuration of the test environments supports configuration management rather than the test management tool.<br>d) Is correct. Selecting the suitable set of test cases for regression testing (i.e., manual/automated test execution) is a typical task of the test analyst related to testware management in the test management tool. It involves selecting and organizing the right set of test cases for each release, which is crucial in incremental and iterative development models. | TA-1.3.7 | K2 | 1 |
| **9** | a, d | a) Is correct. This is the contribution of the test analyst during risk identification, which is part of risk analysis.<br>b) Is not correct. This is the contribution of the test analyst, but during risk control, not risk analysis.<br>c) Is not correct. This task belongs to risk monitoring, not risk analysis.<br>d) Is correct. This is the contribution of the test analyst during risk assessment, which is part of risk analysis.<br>e) Is not correct. Applying test techniques is a risk mitigation activity that is not part of risk analysis. | TA-2.1.1 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **10** | b | First, an impact analysis is performed to determine which test cases are affected by the change in F3:<br>F3 is traced back to R2, R4, and R5. These risks are traced to the following test cases:<br>• R2 to TC1 and TC3<br>• R4 to TC3 and TC5<br>• R5 to TC1 and TC6<br>Therefore, the next regression test execution should involve only TC1, TC3, TC5 and TC6.<br>Next, risk-based testing is applied to prioritize these test cases. From the risk level information, the order of risk mitigation should be R5, R2, and then R4. Hence, the priority is:<br>• First, execute TC1 and TC6 to cover R5.<br>• Next, execute TC3 to cover R2 (TC1 has already been executed).<br>• At last, execute TC5 to cover R4 (TC3 has already been executed).<br>So, the test case to be executed last is TC5, and the correct answer is b. | TA-2.2.1 | K4 | 3 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **11** | a, d | a) Is correct. Your historical data shows that bank account validation has a high likelihood of failure and a critical impact. Photographic recognition of bank accounts adds further risks.<br>b) Is not correct. While the impact of a failure in the balance calculation is major, the backend team is reliable, so the likelihood of regression is very low. The overall risk does not justify executing all regression tests in this area.<br>c) Is not correct. For features unrelated to the changes, the likelihood of failures is very low, so a major risk impact has a relatively low risk level. Due to the limited resources, regression testing should be limited to tests with critical risk impact not related to the changes, and tests with major risk impact can be omitted.<br>d) Is correct. Historical data shows that the incorrect display of dialog elements on various mobile devices is highly likely to fail. The change of the navigation bar affects such dialog elements, so the risk level of regression in the graphical user interface is high.<br>e) Is not correct. 100% coverage of the requirements would be coverage-based regression testing, not history-based regression testing. | TA-2.2.1 | K4 | 3 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **12** | a | a) Is correct. In simplified domain coverage for inequality borders, each boundary must be tested using ON and OFF points. (12, 8) and (12, 7) are ON and OFF for the boundary VAR $\geq$ 8. (10, 10) and (9, 10) are ON and OFF points for the boundary CC $\geq$ 10. Hence, these four points form a set of test points according to the simplified domain coverage.<br>b) Is not correct. (10, 8) is ON for both boundaries, but each ON point for a given boundary should be an IN point for all the other boundaries. Also, OFF points for both boundaries are missing. Moreover, (6, 5) is neither ON nor OFF for any of the borders.<br>c) Is not correct. An OFF point for the boundary VAR $\geq$ 8 is missing. Also, (11, 9) is neither ON nor OFF for any of the borders.<br>d) Is not correct. (15, 11) is neither ON nor OFF for any of the borders. Also, OFF points are missing for both borders. | TA-3.1.1 | K3 | 2 |


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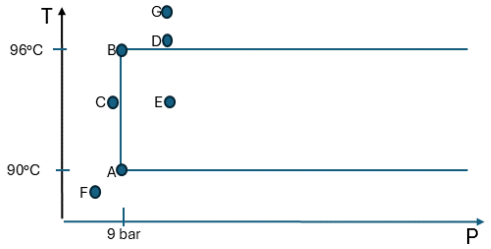
<table>
<tr><th>Question Number (#)</th><th>Correct Answer</th><th>Explanation / Rationale</th><th>Learning Objective (LO)</th><th>K-Level</th><th>Number of Points</th></tr>
<tr><td>13</td><td>c</td><td>The equivalence partitions are defined by the expression with the two variables P (pressure) and T (temperature) for EP1: P≥9 AND T≥90 AND T≤96 and EP2: P<9 OR T<90 OR T>96.<br>EP1 has three closed borders, defined by the three atomic conditions. Reliable domain coverage requires one ON, one OFF, one IN, and one OUT point for each of them. EP2 has three open borders. The graph below visualizes the relation of the tested points A to G to the borders.<br> 

<br>The table below indicates which coverage items are covered by (at least) one of the points A - G and which are missing:
<table>
<tr><td>EP1 Borders</td><td>ON</td><td>OFF</td><td>IN</td><td>OUT</td><td>EP2 Borders</td><td>ON</td><td>OFF</td><td>IN</td><td>OUT</td></tr>
<tr><td>P≥9</td><td>A</td><td>C</td><td>E</td><td>F</td><td>P<9</td><td>C</td><td>A</td><td>F</td><td>E</td></tr>
<tr><td>T≥90</td><td>A</td><td>-</td><td>E</td><td>F</td><td>T<90</td><td>-</td><td>A</td><td>F</td><td>E</td></tr>
<tr><td>T≤96</td><td>B</td><td>D</td><td>E</td><td>G</td><td>T>96</td><td>D</td><td>B</td><td>G</td><td>E</td></tr>
</table>
Therefore, c) is correct. (10.9, 89.5) is an OFF point for T≥90 and, at the same time, an ON point for T<90 since the temperature 89.5 is closest to the border by the given precision of 0.5°C.</td><td>TA-3.1.1</td><td>K3</td><td>2</td></tr>
</table>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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **14** | c | Justification. Base Choice requires to test the base configuration and all configurations where only one element is replaced with all possible values. Therefore, we need six following test cases to achieve Base Choice coverage:<br>1. Win, 16, USB-C (base configuration)<br>2. Linux, 16, USB-C (OS replaced with Linux)<br>3. iOS, 16, USB-C (OS replaced with iOS)<br>4. Win, 32, USB-C (memory replaced with 32GB)<br>5. Win, 64, USB-C (memory replaced with 64GB)<br>6. Win, 16, no USB-C (USB-C port replaced with no USB-C port)<br>Confirurations 1, 3, 4, and 5 are already in the existing set of configurations. Hence, we need to add 2 (Linux, 16, USB-C) and 6 (Windows, 16GB, no USB-C), so the correct answer is c. | TA-3.1.2 | K3 | 2 |


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<table>
<tr><th>Question Number (#)</th><th>Correct Answer</th><th>Explanation / Rationale</th><th>Learning Objective (LO)</th><th>K-Level</th><th>Number of Points</th></tr>
<tr><td>15</td><td>a</td><td>You need 4x4 for the combination of all pairs for building type and material. All combinations of building type and location, as well as all combinations of material and location, can be defined within these 16 test cases, for example:
<table>
<tr><th>TC</th><th>Building type</th><th>Material</th><th>Location</th></tr>
<tr><td>1</td><td>house</td><td>wood</td><td>city</td></tr>
<tr><td>2</td><td>house</td><td>concrete</td><td>suburb</td></tr>
<tr><td>3</td><td>house</td><td>brick</td><td>countryside</td></tr>
<tr><td>4</td><td>house</td><td>mixed</td><td>city</td></tr>
<tr><td>5</td><td>semi-detached</td><td>wood</td><td>suburb</td></tr>
<tr><td>6</td><td>semi-detached</td><td>concrete</td><td>countryside</td></tr>
<tr><td>7</td><td>semi-detached</td><td>brick</td><td>city</td></tr>
<tr><td>8</td><td>semi-detached</td><td>mixed</td><td>suburb</td></tr>
<tr><td>9</td><td>apartment</td><td>wood</td><td>countryside</td></tr>
<tr><td>10</td><td>apartment</td><td>concrete</td><td>city</td></tr>
<tr><td>11</td><td>apartment</td><td>brick</td><td>suburb</td></tr>
<tr><td>12</td><td>apartment</td><td>mixed</td><td>countryside</td></tr>
<tr><td>13</td><td>cottage</td><td>wood</td><td>city</td></tr>
<tr><td>14</td><td>cottage</td><td>concrete</td><td>suburb</td></tr>
<tr><td>15</td><td>cottage</td><td>brick</td><td>countryside</td></tr>
<tr><td>16</td><td>cottage</td><td>mixed</td><td>city</td></tr>
</table>
Hence, a) is correct.</td><td>TA-3.1.2</td><td>K3</td><td>2</td></tr>
</table>


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **16** | c | a) Is not correct. A lack of well-defined coverage criteria makes it difficult to conduct random testing regardless of the type of random testing that is used.<br>b) Is not correct. If a tester does not have an automated test oracle, guided random testing will be as ineffective as unguided random testing.<br>c) Is correct. Redundancy of selected test data can be avoided by modifying the probability distribution to draw an element each time from among those not yet drawn. In this way, no two drawn elements will repeat.<br>d) Is not correct. Data semantics does not depend on whether guided or unguided testing is used. | TA-3.1.3 | K2 | 1 |
| **17** | a | a) Is correct. One variant of CRUD testing verifies that all possible operations occur with a given entity. In this case, CRUD testing checks if the “U” operation (update) is possible for a given entity (password).<br>b) Is not correct. This is an example of random testing and has nothing to do with operations for entities such as create, read, update, or delete.<br>c) Is not correct. This is an example of performance testing.<br>d) Is not correct. This test has nothing to do with operations for entities such as create, read, update, or delete. | TA-3.2.1 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **18** | d | There are 5 round trips:<br>• RT1: Closed, Open, HalfOpen, Closed<br>• RT2: Open, HalfOpen, Closed, Open<br>• RT3: HalfOpen, Closed, Open, HalfOpen<br>• RT4: Open, HalfOpen, Open<br>• RT5: HalfOpen, Open, HalfOpen<br>The test case exercising the sequence of states 'Closed, Open, HalfOpen, Closed, Open, HalfOpen, Open, End' covers RT1, RT2, RT3, and RT4. Therefore, it achieves 4/5 = 80% round trip coverage. Hence, answer d) is correct. | TA-3.2.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **19** | b | There are 16 1-switches in general:<br>• Applied > Accepted > Closed<br>• Applied > Accepted > Activated<br>• Accepted > Activated > Closed<br>• Accepted > Activated > Accepted<br>• Accepted > Closed > Activated<br>• Accepted > Closed > Archived<br>• Accepted > Closed > Accepted<br>• Activated > Accepted > Closed<br>• Activated > Accepted > Activated<br>• Activated > Closed > Activated<br>• Activated > Closed > Archived<br>• Activated > Closed > Accepted<br>• Closed > Activated > Accepted<br>• Closed > Activated > Closed<br>• Closed > Accepted > Closed<br>• Closed > Accepted > Activated<br>However, taking the guard conditions into account, two of them are infeasible: Accepted > Closed > Activated and Activated > Closed > Accepted.<br>Hence, b) is correct. | TA-3.2.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **20** | c | One test case is required for the main scenario:<br>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, one test case for exception 9A (no alternative scenarios are allowed to be combined with this one, due to the test strategy):<br>1, 2, 3, 4, 5, 6, 7, 8, 9A, and two test cases for the alternative scenarios:<br>1, 2, 3, 4A, 2, 3, 4, 5, 6, 7A, 9, 10, 11, 12<br>1, 2, 3, 4, 5, 6A, 2, 3, 4, 5, 6, 7B, 9, 10, 11, 12<br>Note that although it is generally allowed to combine alternatives, alternatives 7A and 7B cannot occur in the same test case. Hence, four test cases are required, and the correct answer is c. | TA-3.2.3 | K3 | 2 |
| **21** | a | There are two scenarios: one with the priority order and one with the regular order. In both cases the process of sending an invoice and receiving payment is done in parallel. Therefore, two test cases are enough.<br>Hence, a) is correct. | TA-3.2.3 | K3 | 2 |


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<table>
<tr><th>Question Number (#)</th><th>Correct Answer</th><th>Explanation / Rationale</th><th>Learning Objective (LO)</th><th>K-Level</th><th>Number of Points</th></tr>
<tr><td>22</td><td>d</td><td>The minimized table is presented below.
<table>
<tr><th>ID</th><th>Conditions</th><th>R1</th><th>R2</th><th>R3</th><th>R4</th><th>R5-8</th><th>R9-10</th><th>R11-12</th></tr>
<tr><td>C1</td><td>Payment type</td><td>D</td><td>D</td><td>D</td><td>D</td><td>D</td><td>C</td><td>C</td></tr>
<tr><td>C2</td><td>PIN OK</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td>N</td><td>n/a</td><td>n/a</td></tr>
<tr><td>C3</td><td>Requested amount OK</td><td>Y</td><td>Y</td><td>N</td><td>N</td><td>-</td><td>Y</td><td>N</td></tr>
<tr><td>C4</td><td>Location OK</td><td>Y</td><td>N</td><td>Y</td><td>N</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Actions</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>A1</td><td>Process payment</td><td>X</td><td>X</td><td></td><td></td><td></td><td>X</td><td></td></tr>
<tr><td>A2</td><td>Inform bank</td><td></td><td>X</td><td></td><td>X</td><td></td><td></td><td></td></tr>
<tr><td>A3</td><td>Inform client</td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td>X</td></tr>
</table>
The minimized table has 7 columns. Therefore, the correct answer is d.</td><td>TA-3.3.1</td><td>K3</td><td>2</td></tr>
<tr><td>23</td><td>b</td><td>R2 has one "-" value, so it represents 2 possible combinations of conditions: TTTT and TFTT, so its checksum is 2. None of these combinations overlap with other rules, so it is consistent with the other rules (hence, 1B). R3 matches the combination TTFT, which is also represented by R1, but these two columns are not action-equivalent, so R3 is inconsistent with R1 (hence, 2D). R4 has no "-" values, so it represents only one combination of conditions, so its checksum is 1 (hence, 3A). R5 has three "-" values so it represents 222 = 8 possible combinations of conditions (hence, 4C). Therefore:<br>a) Is not correct.<br>b) Is correct.<br>c) Is not correct.<br>d) Is not correct.</td><td>TA-3.3.1</td><td>K3</td><td>2</td></tr>
</table>


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **24** | c | a) Is not correct. For the same area, the price ranges can fulfill the relation Max1 - Min1 > Max2 – Min2, but they may form two disjoint intervals. For example, if Min1 = 0, Max1 = 100, Min2 = 200, and Max2 = 201, the relation holds, but the lists L1 and L2 must be disjoint because they contain hotels with disjoint intervals of prices.<br>b) Is not correct. Making the price range Min1…Max1 to a subset of Min2…Max2 does not guarantee that L1 is a subset of L2 since the areas A1 and A2 might differ.<br>c) Is correct. No hotel can exist in two different locations. Therefore, if A1 and A2 are disjoint, the search results for these two disjoint areas must also be disjoint.<br>d) Is not correct. The relation between L1 and L2 depends not only on the areas A1 and A2 but also on the price ranges. For example, if Min1 = 0, Max1 = 99, Min2 = 100 and Max2 = 200, then any hotel in A2 with prices between 100 and 200 will be in L2 but not in L1. | TA-3.3.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **25** | d | a) Is not correct. Although this test case may indicate a failure (the route from a point to itself should be 0 km), this test case, when paired with TC1, TC2, or both of them, does not fulfill the assumptions of either MR1 or MR2, so neither MR1 nor MR2 can be violated.<br>b) Is not correct. When paired with both TC1 and TC2, this test case does not fulfill the assumptions of MR2. When paired with TC1, it does not fulfill the assumptions of MR1, so it cannot violate MR1. When paired with TC2, it fulfills the assumptions of MR1, but in this case, the relation MR2 holds since 282 km >= 282 km.<br>c) Is not correct. When paired with TC1 or TC2, this test case does not fulfill the assumptions of MR1, so MR1 cannot be violated. When paired with TC1 and TC2, the assumptions for MR2 are not fulfilled, so MR2 also cannot be violated.<br>d) Is correct. This test case, when paired with both TC1 and TC2, fulfills the assumptions of MR2, but MR2 is not fulfilled because, according to MR2, the actual result for X = Rome, Y = Milan, O = T should be less than or equal 335 km + 282 km = 617 km, but it equals 630 km. | TA-3.3.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **26** | d | a) Is not correct. First, the security vulnerabilities do not have the highest priority in the scenario. Second, the payment process will be implemented by reusing the mechanisms from the previous project, so it is unlikely that there will be any serious security issues. This test charter fails to address the proper test objectives.<br>b) Is not correct. This test charter focuses only on a particular browser, but the scenario suggests that adaptability to various browser types is key here. Therefore, the test charter should reflect that. The scope of this test charter is too narrow.<br>c) Is not correct. First, the payment process should work fine, as it will be implemented by reusing the proven software. Second, it is unlikely that the payment process will require an augmented reality headset. This test charter fails to address the proper test objectives.<br>d) Is correct. This test charter addresses the proper test objective, focusing on augmented reality features tested in various environments to find user experience problems related to augmented reality features. | TA-3.4.1 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **27** | c | a) Is not correct. It focuses on the security aspect of the payment system, which does not align with the given test objectives.<br>b) Is not correct. The scope of exploration is set too broadly, covering the entire e-commerce web application. Also, using the production server is not appropriate for the test environment.<br>c) Is correct. This test charter is the most suitable for the given situation. It clearly specifies the payment system as the target of exploration. It states the relevant resources (i.e., test data and the staging server) and the information to be discovered (i.e., accuracy, usability, potential defects, and areas for improvement in the payment process).<br>d) Is not correct. It focuses solely on the user interface, excluding the core functional testing of the payment process. | TA-3.4.1 | K3 | 2 |
| **28** | a | a) Is correct. This checklist item fulfills all the criteria listed in the syllabus (i.e., specific, unambiguous, consistent, relevant, maintainable, actionable, measurable, and can be answered with 'yes' or 'no').<br>b) Is not correct. This checklist item is ambiguous, because the application should only indicate the correct and incorrect answers when the user has selected one.<br>c) Is not correct. This checklist item is inconsistent with the specification, which does not indicate that correctness should be indicated by colors.<br>d) Is not correct. This checklist item cannot be answered with 'yes' or 'no'. | TA-3.4.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **29** | c, d | a) Is not correct. This is an additional checklist item verifying functional correctness rather than accessibility. Since functionality is unchanged, this checklist item does not address the changes.<br>b) Is not correct. This is an additional checklist item verifying security rather than accessibility. There is no reason to believe that disabled players' behavior will impact the game's vulnerability.<br>c) Is correct. This verifies the accessibility of the game interrupt situation for players with reading difficulties.<br>d) Is correct. This verifies the accessibility of the game interrupt situation for players with visual disabilities.<br>e) Is not correct. This is not a valid checklist item because the answer cannot be given as yes/no/not applicable. | TA-3.4.2 | K3 | 2 |
| **30** | b | a) Is not correct. Crowd testing is a type of dynamic testing. It is not about test case design.<br>b) Is correct. Crowd testing distributes tests among a group of internal or external testers with diverse backgrounds and locations, making it a good option for performing beta testing.<br>c) Is not correct. Executing test scripts repeatedly does not utilize the main advantage of crowd testing which provides variability and real user perspective.<br>d) Is not correct. Crowd testing is a type of dynamic testing, not static testing. | TA-3.4.3 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **31** | b, e | a) Is not correct. Domain analysis is not suitable because the scenario does not provide any information suggesting a high defect risk in domain implementation.<br>b) Is correct. Metamorphic testing is appropriate because the scenario clearly implies that there will be no test oracle. In such cases, metamorphic testing is a good solution that can address the test oracle problem.<br>c) Is not correct. CRUD testing is not suitable because the scenario does not suggest any need to verify the lifecycle of entities processed by the test object.<br>d) Is not correct. Decision table testing is not suitable because the scenario does not describe any rule-related issues.<br>e) Is correct. Pairwise testing is appropriate because the risk that the application will not work for some configurations can be addressed by applying pairwise testing. | TA-3.5.1 | K4 | 3 |
| **32** | b, d | a) Is not correct. There is no indication in the description that the test object may assume any states that could be checked.<br>b) Is correct. A set of test cases is already available, but the former subject matter expert left the project. Determining metamorphic relations for the source test cases is applicable and a good choice because the test basis is weak and may probably not be used as a test oracle.<br>c) Is not correct. There is no hint that scenarios are available.<br>d) Is correct. Combinatorial testing is a viable solution because it requires little time and a large number of parameters and parameter values.<br>e) Is not correct. There is no indication in the description that CRUD lifecycle functionality is relevant. | TA-3.5.1 | K4 | 3 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **33** | a | a) Is correct. Early modeling of test conditions from the testing perspective is effective quality control of the test basis, which prevents defect occurrence in the work products produced in the subsequent phases of the software development lifecycle.<br>b) Is not correct. Repeatable, automated test scripts are beneficial for test execution automation, not test design automation.<br>c) Is not correct. Configuration management has many benefits, but configuration management is not part of test design automation.<br>d) Is not correct. Automated failure recognition has nothing in common with test design automation. | TA-3.5.2 | K2 | 1 |
| **34** | b | a) Is not correct. This is an example of functional appropriateness testing because it tests whether the categories listed are helpful for the users.<br>b) Is correct. This is an example of functional correctness testing because it verifies the functional correctness of a feature, namely, the correctness of the filtering mechanism.<br>c) Is not correct. This is an example of interoperability testing because it focuses on the interaction between two systems.<br>d) Is not correct. This is an example of usability testing, as it verifies the ease of learning and aesthetics of the interface rather than functional correctness. | TA-4.1.1 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **35** | d | a) Is not correct. Selecting the most experienced users does not take into account the characteristics of the target user groups that should be involved.<br>b) Is not correct. The participants at usability test sessions must be users in the organization rather than test analysts.<br>c) Is not correct. The participants should not be corrected or guided in using the application but observed. Helping them will not provide a correct evaluation of the effectiveness and efficiency of the system's use in real life.<br>d) Is correct. Test analysts can use their knowledge of operational profiles, i.e., patterns of use, and personas to create scenarios that reflect real-life uses of the system. | TA-4.2.1 | K2 | 1 |
| **36** | d | a) Is not correct. This activity supports accessibility testing rather than adaptability testing. Adaptability is about adapting the system to its environments, not about users adapting to the system.<br>b) Is not correct. This supports interoperability testing rather than adaptability testing.<br>c) Is not correct. This supports load testing and scalability testing rather than adaptability testing.<br>d) Is correct. Adaptability testing includes adaptation to various cloud service platforms. As stated in Section 4.3.1, the test analyst supports adaptability testing by identifying the intended target environments and designing tests that cover combinations of these environments. | TA-4.3.1 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **37** | b | a) Is not correct. This is an example of adaptability testing. See Section 4.3.1 in the Syllabus and the Glossary definition of adaptability testing.<br>b) Is correct. Interoperability is the degree to which two or more components or systems can exchange information and use the information that has been exchanged.<br>c) Is not correct. This is an example of usability testing. See Section 4.2.1 in the Syllabus.<br>d) Is not correct. This is an example of functional correctness testing with a focus on accuracy. See Section 4.1.1 in the Syllabus. | TA-4.4.1 | K2 | 1 |
| **38** | a | a) Is correct. Dynamic testing is the least effective approach for defect prevention because it is primarily used to detect defects that already exist in the test object rather than prevent them from occurring.<br>b) Is not correct. Risk analysis is effective in defect prevention as it helps testers identify potential issues early and select appropriate approaches to mitigate risks throughout the software development lifecycle.<br>c) Is not correct. Reviewing an architecture design is an effective defect-prevention activity. It allows testers to identify and address potential issues early in the development process, preventing defects from propagating to later phases of the software development lifecycle.<br>d) Is not correct. Root cause analysis is an effective defect prevention technique. It identifies the underlying causes of defects, allowing teams to address these causes and prevent similar defects from occurring in the future. | TA-5.1.1 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **39** | a | a) Is correct. The combination (YES, YES, NO) of the three conditions (i.e., has a loyalty card, last purchase >= $1000, and not subscribed to the newsletter) fits Rule 1 and Rule 4, but these rules have different discounts. This is a contradiction.<br>b) Is not correct. The rules of the decision table cover each combination of conditions.<br>c) Is not correct. There is no redundancy. Rule 1 and Rule 2 have the same discount, but these two rules model one business rule.<br>d) Is not correct. There is a contradiction – see the correct answer. | TA-5.2.1 | K3 | 2 |
| **40** | d | a) Is not correct. Requirement 236 specifies the event (i.e., the user inserts enough coins). Although the expression 'enough coins' is ambiguous, this ambiguity is not noticeable in a state transition model.<br>b) Is not correct. See requirement 267 for delivering the beverage and requirement 237 for returning the coins. These requirements will result in different events.<br>c) Is not correct. See requirement 235. Returning an invalid coin is not an event in itself but an expected result that can be used in testing.<br>d) Is correct. See requirement 215 and requirement 243. Both requirements describe the same event (i.e., insertion of a coin) for the same precondition or point in the lifecycle (i.e., being in sufficient mode). This combination reflects an ambiguity that would lead to nondeterministic behavior. When modeling such a behavior by means of a state machine, this anomaly can be easily detected. | TA-5.2.1 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **41** | d | a) Is not correct. Experienced users already know about the website's features and layout. Therefore, repeatedly seeing the guide can be annoying and intrusive.<br>b) Is not correct. By automatically hiding the promotion banner after the user has responded, the system avoids being intrusive and allows the user to focus on the guide.<br>c) Is not correct. Providing an option to reaccess the guide allows users flexibility and ensures that the information is always available if they need it.<br>d) Is correct. Closing the guide without the users' consent takes away their control and can be seen as intrusive or disrespectful of their learning preferences. Even if users don't need the guide immediately after step 5, they may find it helpful in the future as they explore the website and its features. | TA-5.2.2 | K3 | 2 |
| **42** | c | 1-C: Scenario-based reviewing involves "dry runs" of processes (e.g., use cases). 2-D: Role-based reviewing uses personas to represent user roles (e.g., administrators). 3-A: Ad hoc reviewing is unstructured and risks duplicate reports. 4-B: Checklist-based reviewing uses predefined prompts but allows reviewers to explore beyond the checklist. So answer c is correct. For the other answers: a: Incorrectly pairs 3-B (Ad hoc $\neq$ Checklist). b: Swaps Scenario (C) and Role-based (D) for 1 and 2. d: Entirely mismatched (e.g., 1-A mislabels Scenario as Ad hoc). | TA-5.2.2 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **43** | b | Defect detection percentage (DDP) for a given phase is measured as D / (D + E), where D is the number of defects detected in this phase, and E is the number of defects that escaped from this phase (and were detected later). The calculation below shows the DDP for the given four phases:<br>DDP (Requirements – modeling and review) = 10 / (10 + 10 + 40 + 20) = 12.5%<br>DDP (Design – modeling and review) = (10 + 10) / (10 + 10 + 40 + 90 + 20 + 30) = 10%<br>DDP (Implementation - static analysis and component testing) = (40 + 90 + 10) / (40 + 90 + 10 + 20 + 30 + 90) = 50%<br>DDP (Testing – system testing and acceptance testing) = (20 + 30 + 90 + 0) / (20 + 30 + 90 + 0) = 100%<br>The lowest DDP occurs in the design phase. It detects only 10% of the defects that could be detected in this phase. Therefore, the correct answer is b. | TA-5.3.1 | K4 | 3 |


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<table>
<tr><th>Question Number (#)</th><th>Correct Answer</th><th>Explanation / Rationale</th><th>Learning Objective (LO)</th><th>K-Level</th><th>Number of Points</th></tr>
<tr><td>44</td><td>c</td><td>According to the model, the predicted number of defects is lines of code (LOC) / 50. The table below shows the predicted versus actual number of defects for each component:
<table>
<tr><th>Component</th><th>Lines of code</th><th>Predicted no. of defects</th><th>Actual no. of defects</th></tr>
<tr><td>control panel</td><td>600</td><td>12</td><td>14</td></tr>
<tr><td>user interface</td><td>2000</td><td>40</td><td>45</td></tr>
<tr><td>backend system</td><td>400</td><td>8</td><td>17</td></tr>
<tr><td>event processing engine</td><td>500</td><td>10</td><td>8</td></tr>
</table>
The actual number of defects is similar to the predicted values for the control panel, user interface, and event processing engine. However, for the backend system, the actual number of defects is more than twice as high as the predicted value. The defect clustering principle suggests this is a defect-prone component, which probably contains more defects. Therefore, focus on this component.<br>Hence, c) is correct.</td><td>TA-5.3.1</td><td>K4</td><td>3</td></tr>
</table>


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **45** | c | a) Is not correct. RCA can only be applied if specific defects or failures are present and need to be analyzed. Therefore, some testing must be done prior to RCA.<br>b) Is not correct. RCA has nothing in common with test techniques.<br>c) Is correct. Usually, the number of defects to be analyzed is very large. Therefore, it is inefficient and time-consuming to plan preventive action for each one. One way to approach this problem is to classify defects into patterns and then do the RCA on those patterns.<br>d) Is not correct. Defect classification takes the problem to a higher, more general level. Therefore, it is unlikely that such an approach would allow a test analyst to perform a more detailed analysis and discover more root causes. | TA-5.3.2 | K2 | 1 |


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# Appendix A – Additional Answer Key

| Question Number (#) | Correct Answer | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|
| **A1** | | TA-1.2.1 | K2 | 1 |
| **A2** | a | TA-1.2.4 | K2 | 1 |
| **A3** | b | TA-1.3.1 | K2 | 1 |
| **A4** | c | TA-1.3.2 | K2 | 1 |
| **A5** | | TA-1.3.6 | K3 | 2 |
| **A6** | | TA-3.1.1 | K3 | 2 |
| **A7** | b | TA-3.1.1 | K3 | 2 |
| **A8** | d | TA-3.1.1 | K3 | 2 |


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# Appendix B – Additional Answers

| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **A1** | | The correct ordering is: D - C - A - B.<br>• Checking that test objectives and test approach are clear is a precondition to test analysis, so activity D must come first.<br>• Reviewing the test basis for testability is one of the first tasks in test analysis, providing early feedback. So, activity C must come next and must precede activity A (defining test conditions).<br>• The TA can define test conditions (activity A) as soon as all preconditions are met (activity D), and the quality of the test basis is appropriate (activity C).<br>• Stakeholders can only review the test conditions (activity B) once the test conditions have been defined (activity A). | TA-1.2.1 | K2 | 1 |
| **A2** | a | a) Is correct. A test analyst should manually rerun failed automated tests to verify whether the failure is due to a genuine defect or a problem with the test automation.<br>b) Is not correct. Fixing automated test scripts is typically the responsibility of a test automation engineer or a technical test analysts, not a test analyst.<br>c) Is not correct. A test analyst should first analyze anomalies to determine if they are caused by actual defects before reporting them. Not all failures in automated tests are due to defects in the system under test.<br>d) Is not correct. While comparing test results is a task of a test analyst, in automated regression testing, this is primarily done by the automated test scripts. The test analyst's role is to investigate failures, not to perform the initial comparison. | TA-1.2.4 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **A3** | b | a) Is not correct. Although it is a high-level test case, the explanation Is not correct. The type of test condition covered does not play a role in this classification.<br>b) Is correct. A high-level test case does not contain specific test data. Specific data is specified when designing low-level test cases based on a high-level test case.<br>c) Is not correct. This is not a low-level test case – see the correct answer.<br>d) Is not correct. This is not a low-level test case – see the correct answer. | TA-1.3.1 | K2 | 1 |
| **A4** | c | a) Is not correct. This violates the necessity criterion because features not yet implemented should not be tested.<br>b) Is not correct. Although the completeness criterion requires a description or reference to test data, explicit test data in the test case would impact the maintainability of the test case. Not all test cases must be low-level.<br>c) Is correct. This is an aspect of consistency in terms of the language used.<br>d) Is not correct. Although short test cases have advantages over long ones, their granularity should always correspond to the test basis and test conditions. End-to-end scenarios should not be split up. | TA-1.3.2 | K2 | 1 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **A5** | | Keyword 1 provides an item with 2 versions, so it is useful for an additional step in the test script to ensure the precondition. Keyword 2, selecting the item, is an action keyword for step 1. Keyword 3, selecting a (different) version of the item, is an action keyword for step 2. Keyword 4, verifying the correctness of the details display against the expected values, is a verification keyword that can be used in both step 1 and 2. Keyword 5, verifying that the details are editable, is a verification keyword that can be used only in step 1. Keyword 6, verifying that the details are not editable, is a verification keyword that can be used only in step 2.<br>Hence, the correct assignment is: 1 - A, 2 - B, 3 - C, 4 - D, 5 - B, 6 - C. | TA-1.3.6 | K3 | 2 |
| **A6** | | Let L denote the length of the letter in mm and W its weight in g. The equivalence partition for standard letters is bounded by the closed borders L $\leq$ 235 for length and W $\leq$ 20 for weight. In consequence,<br>• X1 is an IN point both for length and weight.<br>• X2 is an OUT point for weight only.<br>• X3 is an OFF point for weight only.<br>• X4 is an ON point for both length and weight<br>• X5 is an OUT point for length only.<br>• X6 is an OFF point for length only.<br>Hence, the correct assignments are: X1-2; X2-6; X3-4; X4-1; X5-5; X6-3. | TA-3.1.1 | K3 | 2 |


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| Question Number (#) | Correct Answer | Explanation / Rationale | Learning Objective (LO) | K-Level | Number of Points |
|---|---|---|---|---|---|
| **A7** | b | The specification defines one variable with three adjacent equivalence partitions. These are:<br>• EP1 with one open border $x < 10$;<br>• EP2 with two closed borders $x \geq 10$ and $x \leq 21$;<br>• EP3 with one open border $x > 21$.<br>a) Is not correct. It misses an IN point for EP1, OUT points for EP2 at both borders, and an IN point for EP3. Note that this set provides 100% 2-value BVA coverage.<br>b) Is correct.<br>For EP1's open border at 10: 0 is an IN point, 9 an ON point, 10 an OFF point, and 21 an OUT point.<br>For EP2's closed border at 10: 0 is an OUT point, 9 is an OFF point, 10 is an ON point, and 21 is an IN point.<br>For EP2's closed border at 21: 10 is an IN point, 21 is an ON point, 22 is an OFF point, and 50 is an OUT point.<br>For EP3's open border at 21: 10 is an OUT point, 21 is an OFF point, 22 is an ON point, and 50 is an IN point.<br>c) Is not correct. It misses an IN point for EP1, OUT points for EP2 at both borders, and an IN point for EP3.<br>d) Is not correct. The set is not minimal because the values 11 and 20 can be removed and the remaining set still provides reliable coverage, similar to option B. Note that this is a minimal set for 100% 3-value BVA coverage. | TA-3.1.1 | K3 | 2 |


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|---|---|---|---|---|---|
| **A8** | d | The equivalence partition EP1 of correct baggage dimensions and weights has three borders: D $\geq$ 80, D $\leq$ 158, and W $\leq$ 23. The simplified domain coverage requires for each border a pair of an ON and an OFF point that are as close as possible to each other.<br>a) Is not correct. This data set achieves a simplified domain coverage of 100% but is not minimal. It contains three pairs of ON / OFF points for the three borders. However, 100% coverage can be reached with five points too by using a common ON point for two borders (see option d below).<br>b) Is not correct. This data set does not achieve 100% simplified domain coverage. It contains two ON points at the two corners (80,23) and (158,23) of EP1, but it does not contain the required OFF points at a minimum distance from them for simplified domain coverage. The two points outside EP1 are close but not as close as possible to the ON points at the corners. For example, the OFF point (79,23) which is not in the data set would be closer to (80,23) than (79,24).<br>c) Is not correct. This data set achieves a simplified domain coverage of 100% but is not minimal. The first two are a pair of closest ON / OFF points for the border D $\geq$ 80. The first and the third constitute a pair of closest ON/OFF points for the border D $\leq$ 158. Finally, the fourth and the sixth constitute a pair of closest ON/OFF points for the border W $\leq$ 23. So, the fifth point, (158.24), is superfluous and the set is not minimal.<br>d) Is correct. This data set achieves a simplified domain coverage of 100% and has the minimal number of five elements. The ON / OFF points for the three borders are: (80,23), (79,23); (80,23), (80,24); and (158,20), (159,20). | TA-3.1.1 | K3 | 2 |


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