Sample Exam – Answers

Sample Exam set A
Version 2.1.1

ISTQB® Test Analyst Syllabus Advanced Level

Compatible with Syllabus version 2019

International Software Testing Qualifications Board

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Document Responsibility

The ISTQB® Examination Working Group is responsible for this document.

Acknowledgements

This document was produced by a core team from the ISTQB®: Brian Hambling, Debra Friedenberg, Graham Bath, Inga Hansen, Judy McKay, Kari Kakkonen, Mario Winter, Marco Sogliani, Mette Bruhn-Pedersen, Mike Smith, Minna Aalto, Rex Black, Stuart Reid

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This document is maintained by a core team from ISTQB® consisting of the Syllabus Working Group and Exam Working Group.

Revision History

Sample Exam – Answers Layout Template used:	Version 2.4	Date: Maj 12, 2021

Version	Date	Remarks
2.1.1	May 19, 2021	Update of Copyright Notice
2.1	December, 2019	Revisions made by AELWG to enable launch Added appendix to include LOs not covered in the sample exam
2.0	October 5, 2019	Updated to match syllabus version 2019

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Introduction

Purpose of this document

The sample questions and answers and associated justifications in this sample exam set 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.

These questions cannot be used as-is in any official examination, but they should serve as guidance for question writers. Given the wide variety of formats and subjects, these sample questions should offer many ideas for the individual Member Boards on how to create good questions and appropriate answer sets for their examinations.

Instructions

The answer set is organized in the following way:

- Correct answer – including justification of the answers
- Learning Objective and K-level of Questions
- Answer Key with Learning Objective and K-level for each question

- Questions are contained in a separate document

Answer Key

Question Number (#)	Correct Answer	LO	K-Level	Points
1	b	TA-1.2.1	K2	1
2	d	TA-1.3.1	K2	1
3	b	TA-1.4.1	K2	1
4	a, d	TA-1.4.2	K4	3
5	a	TA-1.4.2	K4	3
6	c	TA-1.5.1	K2	1
7	c	TA-2.1.1	K3	2
8	c	TA-3.2.1	K4	3
9	b	TA-3.2.2	K4	3
10	d	TA-3.2.3	K4	3
11	d	TA-3.2.3	K4	3
12	b	TA-3.2.4	K4	3
13	b	TA-3.2.4	K4	3
14	c	TA-3.2.5	K2	1
15	a	TA-3.2.6	K4	3
16	c	TA-3.2.6	K4	3
17	d	TA-3.2.7	K4	3
18	c	TA-3.2.7	K4	3
19	a, c	TA-3.2.8	K4	3
20	b, e	TA-3.2.8	K4	3

Question Number (#)	Correct Answer	LO	K-Level	Points
21	a	TA-3.3.1	K2	1
22	a, d	TA-3.3.2	K3	2
23	a	TA-3.3.3	K2	1
24	b	TA-3.4.1	K4	3
25	b	TA-4.2.1	K2	1
26	d	TA-4.2.1	K2	1
27	d	TA-4.2.2	K2	1
28	d, e	TA-4.2.3	K2	1
29	b	TA-4.2.3	K2	1
30	a	TA-4.2.4	K4	3
31	d	TA-4.2.5	K2	1
32	b	TA-4.2.5	K2	1
33	c, e	TA-4.2.6	K2	1
34	b, c	TA-4.2.7	K4	3
35	b	TA-4.2.7	K4	3
36	b	TA-5.2.1	K3	2
37	c	TA-5.2.1	K3	2
38	a, c	TA-5.2.2	K3	2
39	a, c	TA-6.2.1	K3	2
40	b	TA-6.3.1	K2	1

Answers

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
1	b	a) Incorrect: Test analysis must start earlier, already during requirement specification in sequential lifecycle models. b) Correct: as per syllabus. This is the correct option of how testing activities should be aligned to the sequential lifecycle model phases. c) Incorrect: As stated in the syllabus, there may be many differences in how the testing activities are aligned. d) Incorrect: As stated in the syllabus a Test Analyst should be involved from the beginning of an agile project.	TA-1.2.1	K2	1
2	d	a) Incorrect: This option ignores test conditions for risk mitigation and goes straight to test cases, and it is not specific about the objectives of test conditions. b) Incorrect: This option does not mention the desired coverage. It is also not feasible for the Test Analyst to create all low/level test cases. c) Incorrect: This option ignores test conditions altogether and goes straight to test cases. d) Correct: With risk mitigation added on to test conditions from the test basis.	TA-1.3.1	K2	1
3	b	a) Incorrect: Yes, this is one of the good reasons, that is to verify that the test cases match the business processes and rules. b) Correct: The Test Manager does control the test cases created by the Test Analyst. Test cases are not used to create high level work products. That would be an incorrect sequence of actions. c) Incorrect: Yes, this is another good reason, namely that other testers should be able to understand and execute test cases. d) Incorrect: Yes, developers need to be sure that they have the same understanding of the requirements as the testers in order to catch misunderstandings and also to participate in the optimization of tests.	TA-1.4.1	K2	1

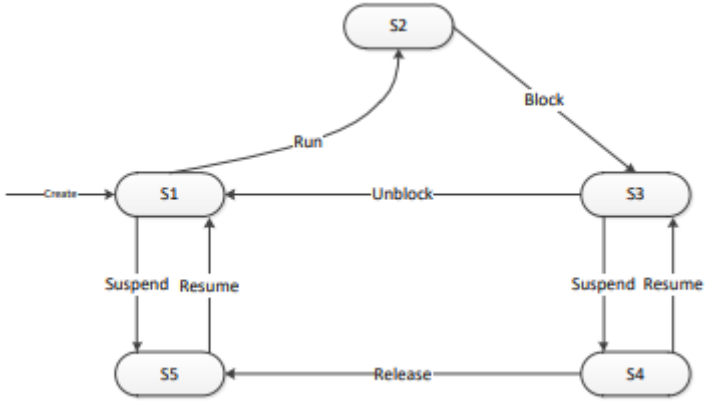
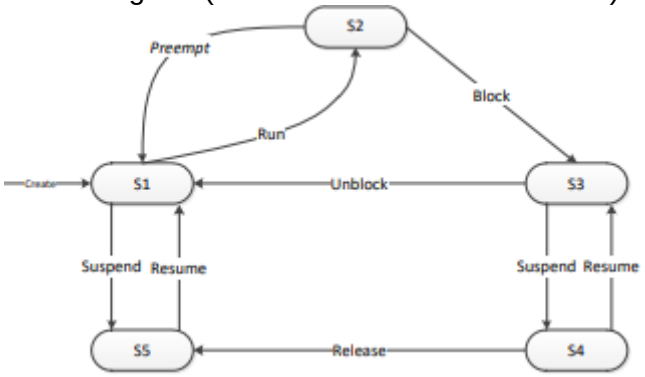
Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
4	a, d	a) Correct: This is the best recommendation for project HIPPOS, the team has experience in testing and in Agile development and the application is an online marketing application where experience based testing at a high level makes a lot of sense. b) Incorrect: The IQ project has to fulfill the demands of the people doing insurance calculation, actuaries and the demands from public legislation.. This places a demand on detailed traceability, so any recommendation that suggests that there is “no need for detailed documentation “ is not correct. Also, testers do not have much testing experience, so high level is not good. c) Incorrect: This is not a good recommendation. There are no arguments that support the same detailed level of documentation for project HIPPOS; it is a marketing application they are building. d) Correct: This is a good recommendation because there are demands for traceability, and the testers do not have much test experience. e) Incorrect: There are no arguments that support the same detailed level of documentation for project HIPPOS; it is a marketing application they are building.	TA-1.4.2	K4	3

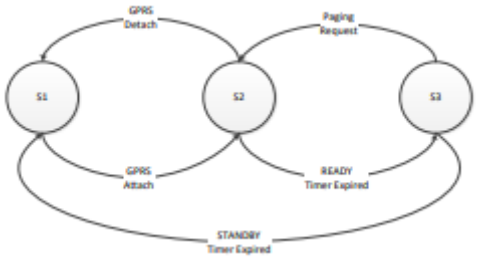
Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
5	a	a) Correct: The syllabus says: “Concrete test cases are useful when the requirements are well-defined, when the testing staff is less experienced and when external verification of the tests, such as audits, is required. Concrete test cases provide excellent reproducibility (i.e., another tester will get the same results), but may also require a significant amount of maintenance effort and tend to limit tester ingenuity during execution”. b) Incorrect: This is not only because it refers to high-level test cases, but also for the fact that testers, who are domain experts without a proper knowledge of formal testing, need concrete test cases anyway. c) Incorrect: This is not only because it refers to high-level test cases but also for the fact that concrete test cases provide better reproducibility than logical test cases. d) Incorrect: Note that traceability is a fundamental aspect for several reasons, for instance audit will almost always check its implementation. Furthermore detailed test procedures and documentation of the concrete test cases are fundamental to support the testers that in this scenario do not have a specific knowledge of formal testing.	TA-1.4.2	K4	3
6	c	a) Incorrect.:Test Analysts may create data to be used with keyword-driven automation testing b) Incorrect;. If a risk-based test strategy is being used, risk priority order may dictate the execution order for the test cases c) Correct When creating the test execution schedule, dependencies between manual and automated test execution must be considered. The activities are not independent. d) Incorrect: Test Analysts must verify the procedures that gather data for evaluating current status against exit criteria	TA-1.5.1	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
7	c	a) Incorrect: This is a good suggestion but has a lower priority because the risk is lower. b) Incorrect: This is a good suggestion but will not mitigate risks as well as the correct answer. It could be done as well as the correct answer, but this should not override the correct answer as the highest priority. c) Correct. The usability risk has a medium likelihood with high impact. This is certainly the highest identified risk level, no matter which method is used to calculate the risk level d) Incorrect: This is a good suggestion but is a lower priority because the risk is lower.	TA-2.1.1	K3	2
8	c	a) Incorrect: see justification for correct answer. b) Incorrect: see justification for correct answer. c) Correct: d) Incorrect: see justification for correct answer	TA-3.2.1	K4	3
9	b	a) Incorrect b) Correct: The six values to test are 40 and 41 for the lower boundary of the Regular partition, 150 and 151 which cover both the upper boundary for Regular and the lower boundary for Frequent, and 300 and 301 for the upper boundary of Frequent.Existing test cases have already covered 3 from the 6 values (i.e., 50%) c) Incorrect d) Incorrect	TA-3.2.2	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
10	d	a) Incorrect: see explanation d for correct answers. b) Incorrect: see explanation d or correct answers. c) Incorrect: see explanation d for correct answers. d) Correct: A full decision table has a number of rules (columns) equal to the product of the numbers of alternative values for each condition. In this case: 2x2x4=16. The minimum test coverage for a decision table is to have one test case for each column of the table: in this case this means 16 test cases	TA-3.2.3	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
11	d	a) Incorrect: see justification for correct answer. b) Incorrect: see justification for correct answer. c) Incorrect: see justification for correct answer. d) Correct: There are three conditions: before 6AM after 9AM Railcard This results in a non-collapsed decision table with 8 decision rules (columns). Two of the decision rules are infeasible because the conditions after 9AM and before 6AM cannot both be true. This reduces the number of decision rules to 6. There are 4 actions: Super-Saver price Saver price Standard Price 25% discount given. The following two decision rules result in identical (redundant) actions where the only action which is true is “Super-Saver price”: 1. before 6AM = false, after 9AM = true, Railcard = true, Action = Super-Saver price, other actions = false 2. before 6AM = false, after 9AM = true, Railcard = false, Action = Super-Saver price, other actions = false One of these decision rules can be eliminated. The result is 5 non-redundant and feasible decion rules (i.e. 5 test cases).	TA-3.2.3	K4	3

12	b	a) Incorrect- see answer b b) Correct: For the non-preemptive scheduler, consider the following state transition diagram (the states have been renamed):  With the specified constraints you just can have the following test cases: (5 states, 4 events): 1 test case S1 → S5 → S1 → S5 → S1 For the preemptive scheduler, let's consider the following state transition diagram (the states have been renamed):  	TA-3.2.4	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
		With the specified constraints you just can have the following test cases: (5 states, 4 events): 4 test cases S1 → S5 → S1 → S5 → S1 S1 → S2 → S1 → S2 → S1 S1 → S5 → S1 → S2 → S1 S1 → S2 → S1 → S5 → S1 c) Incorrect- see answer b d) Incorrect- see answer b			
13	b	a) Incorrect: see answer b b) Correct. If we rename the states as follows  with the specified constraints we can have the following test cases: (2 states, 1 event): NO (3 states, 2 events): 1 test case = S1 → S2 → S1 (4 states, 3 events): 1 test case =S1 → S2 → S3 → S1 (5 states, 4 events): 2 test cases= S1 → S2 → S3 → S2 → S1 S1 → S2 → S1 → S2 → S1 Therefore: 1+1+2=4 test cases c) Incorrect: see answer b d) Incorrect: see answer b	TA-3.2.4	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
14	c	a) Incorrect: Classification trees support the identification of equivalence partitions b) Incorrect: Classification trees support the identification of parameter combinations which are incompatible c) Correct: Classification trees do not support the identification of rules to be used in a decision table d) Incorrect: Classification trees support pairwise testing	TA-3.2.5	K2	1

<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>a) Correct: This can be seen from the following table:
<table>
<tr><th>Case #</th><th>Value 1</th><th>Value 2</th><th>Value 3</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>wilderness</td></tr>
<tr><td>5</td><td>semi-det</td><td>wood</td><td>suburb</td></tr>
<tr><td>6</td><td>semi-det</td><td>concrete</td><td>countryside</td></tr>
<tr><td>7</td><td>semi-det</td><td>brick</td><td>wilderness</td></tr>
<tr><td>8</td><td>semi-det</td><td>mixed</td><td>city</td></tr>
<tr><td>9</td><td>apt</td><td>wood</td><td>countryside</td></tr>
<tr><td>10</td><td>apt</td><td>concrete</td><td>wilderness</td></tr>
<tr><td>11</td><td>apt</td><td>brick</td><td>city</td></tr>
<tr><td>12</td><td>apt</td><td>mixed</td><td>suburb</td></tr>
<tr><td>13</td><td>cottage</td><td>wood</td><td>wilderness</td></tr>
<tr><td>14</td><td>cottage</td><td>concrete</td><td>city</td></tr>
<tr><td>15</td><td>cottage</td><td>brick</td><td>suburb</td></tr>
<tr><td>16</td><td>cottage</td><td>mixed</td><td>countryside</td></tr>
</table>
b) Incorrect: This is the result of the number of parameters multiplied by the choices (3 * 4). But we need at least 16 test cases, because this is the number of combinations for "Material" and "Location"
c) Incorrect: This is the result of 4 to the power of 4, which is too high. Even for the full combination coverage (which subsumes pair-wise) the required number of tests would be 4*4*4 = 64.
d) Incorrect: This is 1-wise coverage. But we need at least 16 test cases, because this is the number of combinations for "Material" and "Location”</td><td>TA-3.2.6</td><td>K4</td><td>3</td></tr>
</table>

<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>16</td><td>c</td><td>a) Incorrect: See answer c.
b) Incorrect: See answer c.
c) Correct: To achieve the required coverage we need a set of test cases that covers all possible discrete combinations of each pair of input parameters (2-wise coverage requires every pair of values of any two parameters be included in at least one combination). In this case the required coverage can be achieved with 9 test cases as shown in the following table:
<table>
<tr><th>TC</th><th>Language</th><th>Browser</th><th>OS</th></tr>
<tr><td>1</td><td>English</td><td>IE8</td><td>Windows XP</td></tr>
<tr><td>2</td><td>English</td><td>IE7</td><td>Windows Vista</td></tr>
<tr><td>3</td><td>English</td><td>Firefox 11</td><td>Windows 7</td></tr>
<tr><td>4</td><td>French</td><td>IE8</td><td>Windows 7</td></tr>
<tr><td>5</td><td>French</td><td>IE7</td><td>Windows XP</td></tr>
<tr><td>6</td><td>French</td><td>Firefox 11</td><td>Windows Vista</td></tr>
<tr><td>7</td><td>Japanese</td><td>IE8</td><td>Windows Vista</td></tr>
<tr><td>8</td><td>Japanese</td><td>IE7</td><td>Windows 7</td></tr>
<tr><td>9</td><td>Japanese</td><td>Firefox 11</td><td>Windows XP</td></tr>
</table>
d) Incorrect: See answer c and the question requires the minimum number of test cases.</td><td>TA-3.2.6</td><td>K4</td><td>3</td></tr>
<tr><td>17</td><td>d</td><td>a) Incorrect: 2 test cases. This is a situation with a test case for main stream and one test case for the exceptions.
b) Incorrect: 1 test case. This is the minimum for main stream but does not take into account the alternatives nor the exceptions.
c) Incorrect: 9 test cases.The figure for this answer is calculated by adding test cases for the options with separate use cases to the correct number given in the correct answer d.
d) Correct: The correct number has one test case for the main stream plus all the exception paths of which there are 4 E1’s and 1 E2.</td><td>TA-3.2.7</td><td>K4</td><td>3</td></tr>
</table>

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
18	c	a) Incorrect: One test case is the minimum for main stream but does not take into account any of the alternatives or exceptions. b) Incorrect: This is the situation with a test case for the main stream and a test case for just one of the alternatives or exceptions. c) Correct: the correct number has the following 4 test cases: • One test case for the main scenario (steps 1 to 9) • One a test case for alternative flow 8a • One test case to cover E1 followed by alternative flow 2a (log out) • One test case to cover E2 followed by alternative flow 2a (log out) d) Incorrect: This is a situation with a test case for main stream and one test case for the two alternative. It does not take into account the exceptions.	TA-3.2.7	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
19	a, c	a) Correct: State transition testing is appropriate because it will test for the correct navigation between the various screens. It will also enable management of the waiting list to be evaluated (e.g. transitions between application approved and waiting list) b) Incorrect: With the current specification, the use of decision table testing will only be of limited value. c) Correct: The specification mentions that an objective is to manage the numbers of players who can register for a particular team. Limits (i.e. numbers of registered players which a team can have) are to be enforced which may result in applicants being placed on a waiting list. The use of boundary value analysis is relevant for testing these limits. d) Incorrect: The required functionality of the app is to remain relatively simple. Use case testing could be applied, but it is less appropriate than state transition testing (answer and equivalence partitioning (answer c). Note that the mention of usability testing in the scenario does not imply that use case testing should be applied as a technique. e) Incorrect: nothing in the scenario indicates that pairwise testing would be appropriate. There is no exlicit mention of combinatorial logic to be applied.	TA-3.2.8	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
20	b, e	a) Incorrect: Although the system may be state-based there is no information about this in the scenario and the approach of building from an existing system suggests there may be minimal definition of state changes. b) Correct: Classification trees offer the opportunity to manage combinations of inputs effectively. c) Incorrect: Some of the inputs are likely to be in partitions (e.g. colors) but these are unlikely to be ordered partitions because they identify alternatives, so boundary value analysis is not appropriate. d) Incorrect: Use case testing is appropriate to the likely development approach but would be based more on overall functional flow than on detailed combinations of inputs. e) Correct: The inputs exist in partitions (options) that are combined, so the combination of classification trees with equivalence partitioning would be an ideal choice	TA-3.2.8	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
21	a	a) Correct: Experience-based techniques can be used as an option of more formal techniques, if the testers have enough experience and information about the system under test. Typically, this can happen in situations when there is time pressure, or the quality of documentation is poor or there is no documentation available. b) Incorrect: Experience-based techniques can be used if no formal techniques can be used, but it is not the only situation – they should be used to complement formal testing whenever it's possible. c) Incorrect: Experience helps the tester to decide where to test more, but experience-based techniques do not necessarily improve the test coverage since they are informal and coverage measurement is not always possible while using these techniques. d) Incorrect: With the use of checklists, experience-based testing can be made more systematic and efficient, but if there is a requirement for the use of black-box test techniques, experience based techniques can't replace them. Even though this is partially correct, the question asks for the BEST option and thus this is not the correct answer	TA-3.3.1	K2	1
22	a, d	a) Correct: Per the syllabus as a way to record results. b) Incorrect: The pass/fail status of the session per the charter should also be recorded. c) Incorrect: Notes from ad-hoc sessions performed by end-users are not a solid basis from which to define exploratory sessions (e.g., the end-users may not have been focused on finding defects). d) Correct: Per the syllabus as you will need this knowledge to figure out what to test since the problem is not defined. e) Incorrect: This is likely to lead to lost results and no overall tracking	TA-3.3.2	K3	2

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
23	a	a) Correct: Defect-based techniques use the typical defects identified for different types of software and programs as the source of test cases in order to find those specific type defects in the software under test. b) Incorrect: Defect-based techniques are mainly used in system testing, not in component testing. c) Incorrect: Test cases are created by analyzing the defects typical for the system under test, not by analyzing the documentation of the system. d) Incorrect: Defect-based testing is not a sub-category of black-box testing, since the specifications are not the basis of the test cases	TA-3.3.3	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
24	b	a) Incorrect: Exploratory testing is not mentioned at all. It ought to be part of the techniques used by this Agile team. For user story US1 EP and BVA are mentioned while decision table would be more likely. Further black-box test techniques are proposed for security testing in user story US4 where attack based, or error-based test techniques would be more suitable based on the scenario. b) Correct: This is the most likely proposal blending a number of test techniques. It mentions both exploratory and defect-based testing, the latter of which is directly supported by the scenario, which states “the team has as part of their retrospectives built check lists of common defects”,. In addition the organization should have experience with the types of defects this type of application will exhibit. Further decision table testing is proposed which matches what is written in the scenario for user story US1. Adaptability testing is for user story US3 and so is checklist-based attacks for security testing in user story US4. c) Incorrect: It is primarily wrong because decision and branch testing are not black-box test techniques, but it could also have mentioned defect-based testing, since the scenario explicitly mentioned that the team has built a list of common defects. d) Incorrect: It is not likely that black-box testing is applicable for user stories US1 to US4 in the scenario. Further there is nothing in user story US1 that supports the use of state transition testing. Instead decision table testing ought to have been mentioned.	TA-3.4.1	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
25	b	a) Incorrect: Functional correctness is not the main focus because functionality which must be correct and accurate has been re-used from a similar application which has been in use for over 3 years. There is low risk that functional correctness is incorrect in the new application. b) Correct: A lack of functional completeness can be considered a risk because new functions are to be implemented and the users have not been involved in their definition. There is a risk that some required functionality has not been implemented. c) Incorrect: Replaceability: this sub-characteristic of portability is clearly not appropriate. d) Incorrect: Functional suitability includes the sub-characteristics mentioned in options “a” and “b”. Option “a” is incorrect	TA-4.2.1	K2	1
26	d	a) Incorrect. When the business expert could indicate correctness issues, this is not the aim of this exploratory testing session. b) Incorrect. Accessibility is not mentioned as an objective of this test session, and the business expert is probably not the best person to find accessibility issues. c) Incorrect The user story is developed, and it is your duty to check its completeness in advance by inviting someone from outside the team to test it. d) Correct. The business expert can validate the appropriateness of the developed screen to allow a customer to choose a new mobile phone plan.	TA-4.2.1	K2	1
27	d	a) Incorrect: the description relates to functional appropriateness b) Incorrect Functional reliability testing is not a quality (sub-) characteristic c) Incorrect: the description relates to functional completeness d) Correct: Functional correctness testing involves detecting incorrect handling of data or situations	TA-4.2.2	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
28	d, e	a) Incorrect: Functional correctness is generally not conducted in component testing b) Incorrect: Suitability testing is usually conducted during system testing, but may also be conducted during the later stages of integration testing c) Incorrect: We are considering functional suitability, not interoperability. d) Correct: Functional correctness tests can be conducted in system testing e) Correct: Functional completeness for system integration testing may focus on the coverage of high-level business cases	TA-4.2.3	K2	1
29	b	a) Incorrect: see answer b) b) Correct: Functional appropriateness testing is usually conducted during system testing, but may also be conducted during the later stages of integration testing. c) Incorrect: see answer b) d) Incorrect: see answer b)	TA-4.2.3	K2	1
30	a	a) Correct: The usability should be verified against the requirements and validated by the real users. b) Incorrect: Validation should be done before release and by real users. c) Incorrect: Heuristic evaluation is not a form of usability survey. d) Incorrect: Usability can't be verified by running a comparison with the existing unacceptable product.	TA-4.2.4	K4	3
31	d	a) Incorrect: This is an interoperability issue with some websites. b) Incorrect: This is an interoperability issue with a specific OS. c) Incorrect: This is an interoperability issue with some browsers. d) Correct: This is a usability defect, not an interoperability defect	TA-4.2.5	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
32	b	a) Incorrect: while usability is an important nonfunctional characteristic, especially in the client application, most of the electric scooters users are young people and they usually have no problems with the application with the typical interface. b) Correct: clearly, the system must work in different environments: Each part must cooperate with the other one, client applications must work under Android and iOS, client and scooter applications must cooperate with GPS, and the server application must serve different type of payments. Therefore interoperability is very important for this system. c) Incorrect: security is not a key quality characteristic of the system; as only part of the system is exposed to security threats. d) Incorrect: performance may be a desired quality characteristic but there is no stated requirement and it would be anyhow less impertant than interoperability.	TA-4.2.5	K2	1
33	c, e	a) Incorrect: This is a typical portability/adaptability defect b) Incorrect: This is a typical portability/installability defect c) Correct This is a typical accessibility defect d) Incorrect: This is a typical portability/ replaceability defect e) Correct: This is a typical interoperability defect	TA-4.2.6	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
34	b, c	a) Incorrect: This addresses installability, which does not relate to the requirements. b) Correct: This test condition relates to usability aspects of requirement 1. "The user must be provided with an interface with which they can easily (do things) with the minimum number of steps" – this targets in particular the efficiency aspects of usability. c) Correct: This test condition addresses the functional accuracy of the app's efficiency function, as stated in requirement 2 d) Incorrect: This addresses interoperability, which does not relate to the requirements. e) Incorrect: This test condition addresses functionality which is not requested.	TA-4.2.7	K4	3
35	b	a) Incorrect. Requirement R005 is a performance requirement and R006 is a technical portability requirement. Both are the responsibility of a Technical Test Analyst. b) Correct. Requirement R003 is an accessibility requirement and R004 is an adaptability requirement. Both are in the Test Analyst's scope. c) Incorrect. Requirement R007 is a security requirement. It is the responsibility of a Technical Test Analyst specialized in software security. d) Incorrect Requirement R004 is in the Test Analyst's scope, but not R006 or R007 (see above justifications for details).	TA-4.2.7	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
36	b	Evaluation of checklist items: 1. Is each requirement testable? YES 2. Does each requirement have acceptance criteria listed? NO 3. Is a use case calling structure available (if applicable)? NO 4. Are the requirements uniquely identified? NO 5. Is the specification versioned? YES 6. Is there traceability visible from each requirement to the business/marketing requirements? NO 7. Is there traceability between the requirements and the use cases? NO The question asks which of the items on the checklist are NOT met by the specification? a) Incorrect: The set of checklist items = [1,2,3]. b) Correct: The set of checklist items = [4,6,7] all three are not met c) Incorrect: The set of checklist items = [3,5,7]. d) Incorrect: The set of checklist items = [4,5,6].	TA-5.2.1	K3	2
37	c	a) Incorrect. The requirement is not testable as there is no measurable criteria to determine if the requirement is met or not. The requirement has an identifier, but it has no version number and there is no traceability to one or more business or marketing requirements. b) Incorrect. See justification for answer A. c) Correct, there is an identifier, but none of the other items are respected (see justification for answer A). d) Incorrect. The requirement is not testable, see justification for answer A.	TA-5.2.1	K3	2

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
38	a, c	a) Correct: Is the story written from the view of the person who is requesting it? (The story is not entirely written from the user's view. There are parts of the story which relate to what the loading machine does. b) Incorrect: Is the feature clearly defined and distinct? (The feature is defined and distinct). c) Correct: Are the acceptance criteria defined and testable? ("Loading machine is ready " cannot be tested because it is not stated what to check. Perhaps the cash entry slot for cash notes flashes. Perhaps the current balance is shown). d) Incorrect: Is the story prioritized? (Priority 1 is explicitly stated). e) Incorrect: Does the story follow the commonly used format? The user story conforms to thes standard structure.	TA-5.2.2	K3	2
39	a, c	a) Correct: The Test Analyst maintains the keywords and data to reflect changes made. b) Incorrect: The Test Analyst does not modularize the automation sctripts. c) Correct: The Test Analyst analyzes anomalies to determine if the problem is with the keywords, the input data, the automation script itself or with the application being tested d) Incorrect: The Test Analyst manually steps through the failed automated test with the same data to see if the failure is in the application itself e) Incorrect: If the cause of the anomaly cannot be found, the test is not removed from the automated regression testing pack.	TA-6.2.1	K3	2

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
40	b	a) Incorrect : Test data preparation tools can “anonymize” data while still maintaining the internal integrity of that data. b) Correct: Test execution tools enable more tests to be run (not fewer) c) Incorrect: Test design tools can help the Test Analyst to choose the types of tests that are needed to obtain a targeted level of test coverage. d) Incorrect: Test execution tools enable the same tests to be repeated in many environments	TA-6.3.1	K2	1

Appendix: Answers to Additional Questions

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
1	b	a) Incorrect: The test basis to be used may vary depending on the test level b) Correct: Expected results may include data and environmental postconditions c) Incorrect: The process may be effective when combined with reviews and static analysis. In addition, dynamic analysis can only be performed during runtime and this is not always possible when designing test cases. d) Incorrect: The required detailed test infrastructure requirements may be defined, although in practice these may not be finalized until test implementation	TA-1.4.3	K2	1
2	a	a) Correct: The tasks listed are consistent with those given in the syllabus b) Incorrect: Implementing test automation and finalizing the test environments are test implementation activities. c) Incorrect: Organizing tests into test suites is a test implementation activity, identifying the test conditions is a test analysis activity. d) Incorrect: Analyzing the test basis is a test analysis activity, selecting test case design techniques is a test design activity.	TA-1.6.1	K2	1