

# Sample Exam – Answers

Sample Exam set A  
Version 2.4

## ISTQB® Test Analyst Syllabus Advanced Level

Compatible with Syllabus version 3.1

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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®: Andreas Gunther, Daniel Pol'an, Jean-Baptiste Crouigneau, Lucjan Stapp, Michael Stahl, and 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 2.5 Date: May 21, 2021

Version	Date	Remarks
2.4	May 21, 2021	Update of Copyright Notice Minor correction to answers: #11, #12, #13, #16, #18, #26, and #37
2.3	March 3, 2021	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
2.2	unpublished	New template applied
2.1	December 19, 2019	Revisions made by AELWG to enable launch
2.0	October 5, 2019	Release of sample exam for CTAL-TA 2019
1.3	February 19, 2019	Minor correction of answer option labels Correcting of Pick-N type answers
1.2	December 5, 2018	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)
1.01	November 23, 2012	Version for release
1.00	October 19, 2012	Version for voting

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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

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*

## 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	b	TA-3.2.1	K4	3
9	b	TA-3.2.2	K4	3
10	b, c	TA-3.2.3	K4	3
11	d	TA-3.2.3	K4	3
12	c	TA-3.2.4	K4	3
13	a	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	a, e	TA-4.2.3	K2	1
29	b	TA-4.2.3	K2	1
30	a	TA-4.2.4	K2	1
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) Is not correct. Test analysis must start earlier, already during requirement specification in sequential lifecycle models b) Is correct. As per syllabus. This is the correct option of how testing activities should be aligned to the sequential lifecycle model phases c) Is not correct. As stated in the syllabus, there may be many differences in how the testing activities are aligned d) Is not correct. As stated in the syllabus a Test Analyst should be involved from the beginning in agile software development	TA-1.2.1	K2	1
2	d	a) Is not correct. 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) Is not correct. This option ignores analysis of user stories and omits mention of desired coverage c) Is not correct. This option ignores test conditions altogether and goes straight to test cases d) Is correct. With risk mitigation added on to test conditions from the test basis	TA-1.3.1	K2	1
3	b	a) Is not correct. Yes, this is one of the good reasons, that is to verify that the test cases match the business processes and rules b) Is correct. Test cases should be created to comply with the organization's test strategy, not the other way around c) Is not correct. Yes, this is another good reason, namely that other testers should be able to understand and execute test cases d) Is not correct. 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	<p>a) Is correct. This is the best recommendation for project HIPPOS, the team has experience in testing and in Agile software development and the application is an online marketing application where experience-based testing at a logical level makes a lot of sense</p> <p>b) Is not correct. One of the requirements of the IQ project is compliance with public legislation, which generally means traceability, so this is not a good recommendation. Also, testers do not have much testing experience, so logical level is not good</p> <p>c) Is not correct. 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</p> <p>d) Is correct. This is a good recommendation because traceability provides transparency on the coverage, and the testers do not have much test experience</p> <p>e) Is not correct. There are no arguments that support the same detailed level of documentation for project HIPPOS; it is a marketing application they are building</p>	TA-1.4.2	K4	3



Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
5	a	<p>a) Is correct. In syllabus is said that low-level test cases are useful when we do not expect defects in the test basis and the level of detail enables an independent verification of the tests, such as audits, while high-level test cases are useful when no detailed and formal documentation is required</p> <p>b) Is not correct. Testers, who are domain experts without a proper knowledge of formal testing, need concrete test cases anyway</p> <p>c) Is not correct. Thorough testing of the very detailed requirements specifications calls for Low-level test cases</p> <p>d) Is not correct. 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 have not a specific knowledge of formal testing</p>	TA-1.4.2	K4	3
6	c	<p>a) Is not correct. Unscripted testing should be conducted in time boxed sessions</p> <p>b) Is not correct. If a risk-based test strategy is being used, risk priority order may dictate the execution order for the test cases</p> <p>c) Is correct. When creating the test execution schedule, dependencies between manual and automated test execution must be considered. The activities are not independent</p> <p>d) Is not correct. Test Analysts must verify the procedures that gather data for evaluating current status against exit criteria</p>	TA-1.5.1	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
7	c	<p>a) Is not correct. Is a good suggestion but is a lower priority because the risk is lower</p> <p>b) Is not correct. Is a good suggestion but will not mitigate risk as well 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</p> <p>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</p> <p>d) Is not correct. This is a good suggestion but is a lower priority because the risk is lower</p>	TA-2.1.1	K3	2

8	b	<p>The following are the equivalence classes for this question:</p> <p>alcohol (2 classes):          (a1) <math>\leq 20</math> unit per week          (a2) <math>&gt; 20</math> unit per week</p> <p>filling in a "health risk assessment" (2 classes):          (h1) Yes          (h2) No</p> <p>Participation in the health class:          (p1) Yes          (p2) No</p> <p>BMI: (3 classes):          (b1) <math>BMI \leq 27.5</math>          (b2) <math>27.5 &lt; BMI &lt; 30</math>          (b3) <math>BMI \geq 30</math></p> <p>Smokers: (3 classes):          (s1) Not smoking          (s2) Smoking and joining a stop-smoking class          (s3) Smoking and not joining the class</p> <p>Note that BMI and Smokers cases can only be tested when using p1, otherwise these parameters are not even looked at by the code.</p> <p>The following 4 test cases are needed to achieve 100% coverage of equivalence partitions of the valid input parameters:</p> <ol style="list-style-type: none"> <li>15 unit of alcohol (a1), not filling Health risk assessment (h2) not taking part in yearly health control (p2), BMI and smokers are not covered</li> </ol>	TA-3.2.1	K4	3
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2. 15 unit of alcohol (a1), filling in a "health risk assessment" (h1), taking part in yearly health control (p1), BMI 25.0 (b1) and not smoking (s1)
3. 25 unit of alcohol(a2). filling in a "health risk assessment" (h2), taking part in yearly health control (p1), BMI 28.0 (b2), smoking and joining a stop-smoking class (s2)
4. 15 unit of alcohol (a1), filling in a "health risk assessment" (h1), taking part in yearly health control (p1), BMI 32.0 (b3), smoking and not joining a stop-smoking class (s3)

The following table shows how the different ECs are covered:

	T1	T2	T3	T4
<b>Alcohol</b>	≤20 (a1)	>20 (a2)	~	~
<b>Assessment</b>	N (h2)	Y (h1)	~	~
<b>Health control participation</b>	N (p2)	Y (p1)	Y (p1)	Y (p1)
<b>BMI</b>	Not relevant	≤27.5 (b1)	27.5 < ... <30 (b2)	≥ 30 (b3)
<b>Smoking</b>	Not relevant	N (s1)	Y + in class (s2)	Y + not in class (s3)

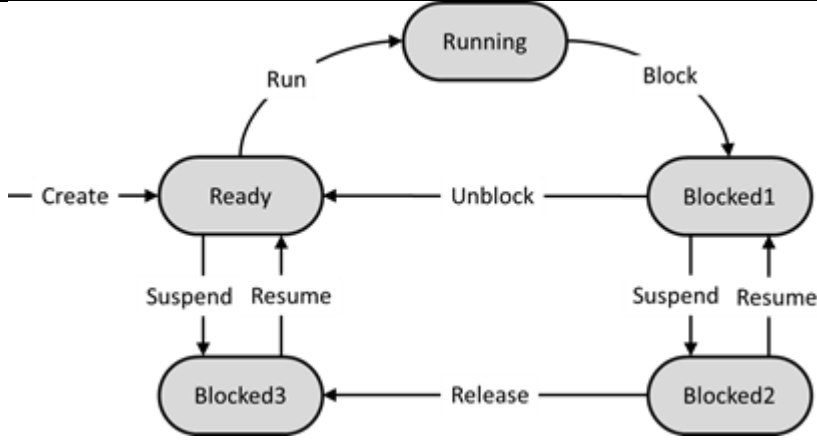
A simpler/faster way to arrive to this conclusion is this:

There are two variables that have 3 equivalence classes. Therefore, you have to have at least 3 tests. Since the second parameter (smoking) is only active when “program participation” = Yes”, it means that none of the 3 values of Smoking will be tested when Participation = No. So you need 3 tests with Participation=“Yes”, and one more test to allow Participation to be

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
		<p>set to “No”. The other parameters, having only 2 EC, will be covered by the same tests.</p> <p>Thus:</p> <ul style="list-style-type: none"> <li>a) Is not correct</li> <li>b) Is correct</li> <li>c) Is not correct</li> <li>d) Is not correct</li> </ul>			
9	b	<p>One needs the following 6 values to achieve 100% coverage for Regular and Frequent:</p> <p>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.</p> <p>Existing tests cases have already covered the point values 12, 150, 151, 152 and 301.</p> <p>Hence for Regular 150 and 151 is covered and for Frequent 301; 3 points from 6 are covered (i.e., 50%).</p> <p>Thus:</p> <ul style="list-style-type: none"> <li>a) Is not correct</li> <li>b) Is correct</li> <li>c) Is not correct</li> <li>d) Is not correct</li> </ul>	TA-3.2.2	K4	3

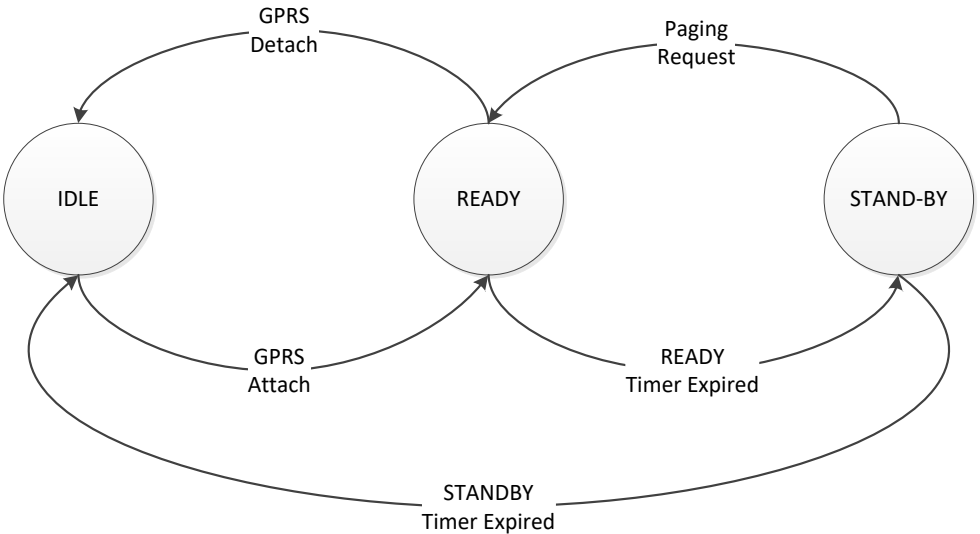
Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
10	b, c	<p>a) Is not correct. Due to the “don’t care” values, the decision table needs less than <math>2^n</math> rules. If we expanded the “don’t care” values, to a full decision table, R3 would expand to two rules and R4 to four rules, which yields the correct number of 8 rules</p> <p>b) Is correct. The “don’t care” value for C2 in rule R3 is wrong. The rule must be split into two rules with the do not care value replaced with ‘True’ and ‘False’ respectively, because action A1 depends on condition C2</p> <p>c) Is correct. A non-registered customer cannot have a registered credit card, so the system cannot provide the information if it is valid and the value should be a “N/A” (see Syllabus section 3.2.3 sub-section on ‘Collapsed decision tables’)</p> <p>d) Is not correct. According to the last sentence in the specification, direct debit is not allowed for non-registered customers, regardless of the purchase amount. Hence, the “don’t care” value for condition C3 ‘Amount &lt;= 500€’ is correct</p> <p>e) Is not correct. The combination mentioned is C1 = ‘True’, C2 = ‘False’ and C3 = ‘False’ which is only contained in rule R2, not in rule R1. The table is consistent</p>	TA-3.2.3	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
11	d	<p>a) Is not correct. According to the specification, the inputs of the test object are the cellular network connectivity, the data volume available for the mobile subscription, and the file to download. The difference between the data volume available and the file size is a condition but not a direct input.                      (See Syllabus section 3.2.3, last paragraph of the introductory sub-section)</p> <p>b) Is not correct. The test data need not contain two files of sizes above / below 20 KB. One can cover all rules with one single file with a fixed size if the data volume available is chosen appropriately, e.g., file size – 1 KB for R2, file size + 10 KB for R3, file size + 30 KB for R4, and file size + 10 KB for R5</p> <p>c) Is not correct. Connection strength = 2 bars is only mandatory for two test cases covering the two rules R3 and R4, with actions A3 and A1 respectively. Rule R2 which covers action A2 can also be tested with more than 2 bars connectivity</p> <p>d) Is correct. The fact that the collapsed rules are consistent and complete can be seen easily if one splits rule R2 into two rules:                      R2a with condition C2 having the value <math>\geq 2</math> bars, and                      R2b with condition C2 having the value <math>&lt; 0</math> KB</p>	TA-3.2.3	K4	3

12	c	 <p>There are nine feasible 1-switches:</p> <ul style="list-style-type: none"> <li>S1: Ready (Run) Running (Block) Blocked1</li> <li>S2: Ready (Suspend) Blocked3 (Resume) Ready</li> <li>S3: Running (Block) Blocked1 (Unblock) Ready</li> <li>S4: Running (Block) Blocked1) (Suspend) Blocked2</li> <li>S5: Blocked1 (Suspend) Blocked2 (Resume) Blocked1</li> <li>S6: Blocked1 (Suspend) Blocked2 (Release) Blocked3</li> <li>S7: Blocked2 (Resume) Blocked1 (Unblock) Ready</li> <li>S8: Blocked2 (Resume) Blocked1 (Suspend) Blocked2</li> <li>S9: Blocked2 (Release) Blocked3 (Resume) Ready</li> </ul> <p>There are also 4 other 1-switches:</p> <ul style="list-style-type: none"> <li>Blocked1 (Unblock) Ready (Run) Running</li> <li>Blocked1 (Unblock) Ready (Suspend) Blocked3</li> <li>Blocked3 (Resume) Ready (Suspend) Blocked3</li> <li>Blocked3 (Resume) Ready (Run) Running</li> </ul>	TA-3.2.4	K4	3
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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
		<p>but they are infeasible, since the state in the middle is “Ready”, which forces the test to stop after reaching this state. Hence, we need to cover nine unique 1-switches S1-S9. Notice that four of them end in the “Ready” state, so none two of these four can be included in a single test case. Therefore, we need at least four test cases, and this is enough, for example:</p> <p>TC1: Ready (Suspend) Blocked3 (Resume) Ready                      TC2: Ready (Run) Running (Block) Blocked1 (Unblock) Ready                      TC3: Ready (Run) Running (Block) Blocked1 (Suspend) Blocked2 (Resume) Blocked1 (Suspend) Blocked2 (Release) Blocked3 (Resume) Ready                      TC4: Ready (Run) Running (Block) Blocked1 (Suspend) Blocked2 (Resume) Blocked1 (Unblock) Ready</p> <p>TC1 covers S2                      TC2 covers in addition S1 and S3                      TC3 covers in addition S4, S5, S8, S6, S9                      TC4 covers in addition S7</p> <p>Thus</p> <p>a) Is not correct                      b) Is not correct                      c) Is correct                      d) Is not correct</p>			

13	d	 <pre>             graph LR                 IDLE((IDLE)) -- "GPRS Detach" --&gt; READY((READY))                 READY -- "GPRS Attach" --&gt; IDLE                 READY -- "Paging Request" --&gt; STANDBY((STAND-BY))                 STANDBY -- "READY Timer Expired" --&gt; READY                 STANDBY -- "STANDBY Timer Expired" --&gt; IDLE             </pre> <p>100% roundtrip coverage is achieved when all loops from any state back to the same state have been tested for all states at which loops begin and end. This loop cannot contain more than one occurrence of any particular state (except the initial/final one). Considering only READY state, following are the valid test cases:</p> <ol style="list-style-type: none"> <li>1. READY &gt; STAND-BY &gt; READY</li> <li>2. READY &gt; IDLE &gt; READY</li> <li>3. READY &gt; STAND-BY &gt; IDLE &gt; READY</li> </ol> <p>Thus</p> <ol style="list-style-type: none"> <li>a) Is correct</li> <li>b) Is not correct</li> <li>c) Is not correct</li> </ol>	TA-3.2.4	K4	3
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Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
		d) Is not correct			
14	c	a) Is not correct. Classification trees support the identification of equivalence partitions b) Is not correct. Classification trees support the identification boundary values c) Is correct. Classification trees do not support the identification of rules to be used in a decision table d) Is not correct. Classification trees support pairwise testing	TA-3.2.5	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points																																																																				
15	a	<p>a) Is correct. We need at least <math>4 * 4 = 16</math> test cases to cover all combinations for "Material" and "Location". That 16 combinations are sufficient can be seen from the following table:</p> <table border="1" data-bbox="645 459 1402 1054"> <thead> <tr> <th>case #</th> <th>Value 1</th> <th>Value 2</th> <th>Value 3</th> </tr> </thead> <tbody> <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-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>wilderness</td></tr> <tr><td>8</td><td>semi-detached</td><td>mixed</td><td>city</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>wilderness</td></tr> <tr><td>11</td><td>apartment</td><td>brick</td><td>city</td></tr> <tr><td>12</td><td>apartment</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> </tbody> </table> <p>b) Is not correct. This is the result of the number of parameters multiplied by the choices (<math>3 * 4</math>). But we need at least 16 test cases, because this is the number of combinations for "Material" and "Location"</p> <p>c) Is not correct. Even for the full combination coverage (which subsumes pairwise) the required number of tests would be <math>4 * 4 * 4 = 64</math></p> <p>d) Is not correct. This is 1-wise coverage. But we need at least 16 test cases, because this is the number of combinations for "Material" and "Location"</p>	case #	Value 1	Value 2	Value 3	1	house	wood	city	2	house	concrete	suburb	3	house	brick	countryside	4	house	mixed	wilderness	5	semi-detached	wood	suburb	6	semi-detached	concrete	countryside	7	semi-detached	brick	wilderness	8	semi-detached	mixed	city	9	apartment	wood	countryside	10	apartment	concrete	wilderness	11	apartment	brick	city	12	apartment	mixed	suburb	13	cottage	wood	wilderness	14	cottage	concrete	city	15	cottage	brick	suburb	16	cottage	mixed	countryside	TA-3.2.6	K4	3
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15	cottage	brick	suburb																																																																						
16	cottage	mixed	countryside																																																																						

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points																																								
16	c	<p>To achieve the required coverage, we have to generate a set of test cases that covers all possible discrete combinations of each pair of input parameters. In this case the required coverage can be achieved with 9 test cases as shown in the following table:</p> <table border="1" data-bbox="624 523 1420 876"> <thead> <tr> <th>TC</th> <th>Language</th> <th>Browser</th> <th>OS</th> </tr> </thead> <tbody> <tr><td>1</td><td>English</td><td>Br1</td><td>OpS1</td></tr> <tr><td>2</td><td>English</td><td>Br2</td><td>OpS2</td></tr> <tr><td>3</td><td>English</td><td>Br3</td><td>OpS3</td></tr> <tr><td>4</td><td>French</td><td>Br1</td><td>OpS3</td></tr> <tr><td>5</td><td>French</td><td>Br2</td><td>OpS1</td></tr> <tr><td>6</td><td>French</td><td>Br3</td><td>OpS2</td></tr> <tr><td>7</td><td>Japanese</td><td>Br1</td><td>OpS2</td></tr> <tr><td>8</td><td>Japanese</td><td>Br2</td><td>OpS3</td></tr> <tr><td>9</td><td>Japanese</td><td>Br3</td><td>OpS1</td></tr> </tbody> </table> <p>Thus:                      a) Is not correct                      b) Is not correct                      c) Is correct                      d) Is not correct. The question requires the minimum number of test cases</p>	TC	Language	Browser	OS	1	English	Br1	OpS1	2	English	Br2	OpS2	3	English	Br3	OpS3	4	French	Br1	OpS3	5	French	Br2	OpS1	6	French	Br3	OpS2	7	Japanese	Br1	OpS2	8	Japanese	Br2	OpS3	9	Japanese	Br3	OpS1	TA-3.2.6	K4	3
TC	Language	Browser	OS																																										
1	English	Br1	OpS1																																										
2	English	Br2	OpS2																																										
3	English	Br3	OpS3																																										
4	French	Br1	OpS3																																										
5	French	Br2	OpS1																																										
6	French	Br3	OpS2																																										
7	Japanese	Br1	OpS2																																										
8	Japanese	Br2	OpS3																																										
9	Japanese	Br3	OpS1																																										

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
17	d	<p>a) Is not correct. This is a situation with a test case for mainstream and one test case for the exceptions</p> <p>b) Is not correct. 1 is the minimum for mainstream but does not take into account the alternatives nor the exceptions</p> <p>c) Is not correct. 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</p> <p>d) Is correct. The correct number has one test case for the mainstream plus all the exception paths of which there are 4 E1's and 1 E2</p>	TA-3.2.7	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
18	c	<p>We need one test case for the main behavior. The remaining two alternative behaviors and two exceptions can be covered by three other test cases, so four test cases are needed in all, for example:</p> <p>TC1: main path: 1, 2, 3, 4, 5, 6, 7, 8, 9                      TC2: forcing alternative 3a and exception E1: 1, 2, 3a, 2, E1                      TC3: forcing alternative 8a: 1, 2, 3, 4, 5, 6, 7, 8a, 9                      TC4: forcing E2: 1, 2, 3, E2</p> <p>Note that we cannot cover the two alternative behaviors 3a and 8a and the two exceptions E1 and E2 with less than three test cases, because testing 8a requires to not invoke E1 and E2 (these events are before the step 8), and each exception must be tested with a separate test case, since the occurrence of an exception immediately ends the use case. Alternative 3a can be combined with the occurrence of E1 (or E2).</p> <p>Thus:</p> <ul style="list-style-type: none"> <li>a) Is not correct</li> <li>b) Is not correct</li> <li>c) Is correct</li> <li>d) Is not correct</li> </ul>	TA-3.2.7	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
19	a, c	<p>a) Is 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)</p> <p>b) Is not correct: With the current specification, the use of decision table testing will only be of limited value</p> <p>c) Is 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.</p> <p>d) Is not correct. 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 a) and boundary value analysis (answer c). Note that the mention of usability testing in the scenario does not imply that use case testing should be applied as a test technique</p> <p>e) Is not correct. Nothing in the scenario indicates that pairwise testing would be appropriate. There is no explicit mention of combinatorial logic to be applied</p>	TA-3.2.8	K4	3



Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
20	b, e	a) Is not correct. 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) Is correct. Classification trees offer the opportunity to manage combinations of inputs effectively c) Is not correct. 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) Is not correct. User 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) Is 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	<p>a) Is correct. Experience-based techniques can be used as an option of more formal test 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</p> <p>b) Is not correct. Experience-based techniques can be used if no formal test techniques can be used, but it is not the only situation – they should be used to complement formal testing whenever it is possible</p> <p>c) Is not correct. Experience helps the tester to decide where to test more, but experience-based techniques do not necessarily improve the coverage since they are informal and coverage measurement is not always possible while using these techniques</p> <p>d) Is not correct. 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 cannot replace them. Even though this is partially correct, the question asks for the BEST option and thus this is not the correct answer</p>	TA-3.3.1	K2	1
22	a, d	<p>a) Is correct. Per the syllabus as a way to record results</p> <p>b) Is not correct. The pass/fail status of the session per the test charter should also be recorded</p> <p>c) Is not correct. Test cases are not normally defined for exploratory sessions</p> <p>d) Is correct. Per the syllabus as you will need this knowledge to figure out what to test since the problem is not defined</p> <p>e) Is not correct. This is likely to lead to lost results and no overall tracking</p>	TA-3.3.2	K3	2

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
23	a	a) Is correct. The defect-based test technique uses 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) Is not correct. Defect-based test techniques are mainly used in system testing, not in component testing c) Is not correct. Test cases are created by analyzing the defects typical for the system under test, not by analyzing the documentation of the system d) Is not correct. 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	<p>a) Is not correct. Defect-based testing is not mentioned at all. The team should use the taxonomy of common defect they built. For no 1 EP and BVA are mentioned while decision table would be more likely. Further black-box test techniques are proposed for security testing in no 4 where attack based, or defect-based test technique would be more suitable based on the scenario</p> <p>b) Is correct. This is the most likely proposal blending a number of techniques: It mentions both exploratory and defect-based testing, the latter of which is directly supported by the scenario, that states “the team ...has as part of their retrospectives-built checklists of common defects...” and because 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 no 1. Automated configuration testing is supported by the scenario for no 3 and so is checklist-based attacks for security testing in no 4</p> <p>c) Is not correct. It is primarily wrong because there is no interoperability characteristics described in US1, but it could also have mentioned defect-based testing, since the scenario explicitly mentioned that the team has built a list of common defects</p> <p>d) Is not correct. It is not likely that black-box testing is applicable for no 1-4 in the scenario further there is nothing in no 1 that supports the use of state transition testing, instead decision table testing ought to have been mentioned</p>	TA-3.4.1	K4	3

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
25	b	<p>a) Is not correct. 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</p> <p>b) Is 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</p> <p>c) Is not correct. Replaceability: this sub-characteristic of portability is clearly not appropriate</p> <p>d) Is not correct: Recoverability should be covered by a Technical Test Analyst and does not seem to be a main concern in this scenario</p>	TA-4.2.1	K2	1
26	d	<p>a) Is not correct. When the business expert could indicate correctness issues, this is not the aim of this exploratory testing session</p> <p>b) Is not correct. Accessibility is not mentioned as an objective of this test session, and business expert is probably not the best person to find accessibility issues</p> <p>c) Is not correct. Exploratory testing with a business expert is not the best way to check adaptability</p> <p>d) Is correct. The business expert can validate the appropriateness of the developed screen to allow a customer to choose a new mobile phone plan</p>	TA-4.2.1	K2	1
27	d	<p>a) Is not correct. The description relates to functional appropriateness</p> <p>b) Is not correct. Functional reliability testing is not a quality (sub-) characteristic</p> <p>c) Is not correct. The description relates to functional completeness</p> <p>d) Is correct. Functional correctness testing involves detecting incorrect handling of data or situations</p>	TA-4.2.2	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
28	a, e	<p>a) Is correct. Functional correctness tests can be conducted at any stage, and component testing is the earliest one</p> <p>b) Is not correct. Appropriateness testing is usually conducted during system testing but may also be conducted during the later stages of integration testing. Testing Appropriateness during acceptance testing is too late</p> <p>c) Is not correct. We are considering functional suitability, not interoperability</p> <p>d) Is not correct. Functional correctness tests can be conducted at any test level, so system testing is not the earliest one</p> <p>e) Is correct. Functional completeness for system integration testing may focus on the coverage of high-level business processes</p>	TA-4.2.3	K2	1
29	b	<p>a) Is not correct. Functional appropriateness is generally difficult to evaluate at a component level when you can only evaluate a small part of the system</p> <p>b) Is correct. Functional appropriateness testing is usually conducted during system testing, but may also be conducted during the later stages of integration testing</p> <p>c) Is not correct. Functional appropriateness testing should be conducted before acceptance tests when it could lead to huge coding rework</p> <p>d) Is not correct. Functional appropriateness should not be part of alpha or beta testing objectives. During alpha and beta testing, users will be more focused on usability and completeness issues (for instance)</p>	TA-4.2.3	K2	1

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
30	a	a) Is correct. The usability should be verified against the requirements and validated by the real users b) Is not correct. Validation should be done before release and by real users c) Is not correct. Heuristic evaluation is not a form of usability survey d) Is not correct. Usability cannot be verified by running a comparison with the existing unacceptable product	TA-4.2.4	K2	1
31	d	a) Is not correct. This is an interoperability issue with some websites b) Is not correct. This is an interoperability issue with a specific OS c) Is not correct. This is an interoperability issue with some browsers d) Is correct. This is a usability defect, not an interoperability defect	TA-4.2.5	K2	1
32	b	a) Is not correct. While usability is an important nonfunctional characteristic, especially in the client application, most of the electric scooter's users are young people and they usually have no problems with the application with the typical interface b) Is correct. It is easy to observe that the system must work in different environments: each part must cooperate with the other one; Therefore, interoperability is very important for this system c) Is not correct. As a Test Analyst, security testing should not be under your responsibility d) Is not correct. Performance may be a desired quality characteristic but there is no stated requirement and it would be anyhow less important than interoperability	TA-4.2.5	K2	1
33	c, e	a) Is not correct. This is a typical portability/adaptability defect b) Is not correct. This is a typical portability/installability defect c) Is correct. This is a typical accessibility defect d) Is not correct. This is a typical portability/ replaceability defect e) Is 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) Is not correct. This addresses installability, which does not relate to the requirements b) Is 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 target in particular the efficiency aspects of usability c) Is correct. This test condition addresses the functional accuracy of the app’s efficiency function, as stated in requirement 2 d) Is not correct. This addresses interoperability, which does not relate to the requirements e) Is not correct. This test condition addresses functionality which is not requested	TA-4.2.7	K4	3
35	b	a) Is not correct. R005 is a performance requirement and R006 is a technical portability requirement. Both must be taken in charge by a technical test analyst b) Is correct. R003 is an accessibility requirement and R004 is an adaptability requirement. All are in test analyst scope c) Is not correct. R007 is a security requirement. It must be taken in charge by a technical test analyst specialized in software security d) Is not correct. R004 is in the test analyst 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	<p>Evaluation of checklist items:</p> <table border="1" data-bbox="580 389 1464 772"> <tr> <td>1.</td> <td>Is each requirement testable?</td> <td>YES</td> </tr> <tr> <td>2.</td> <td>Does each requirement have acceptance criteria listed?</td> <td>NO</td> </tr> <tr> <td>3.</td> <td>Does each requirement have a defined priority level?</td> <td>NO</td> </tr> <tr> <td>4.</td> <td>Are the requirements uniquely identified?</td> <td>NO</td> </tr> <tr> <td>5.</td> <td>Is the specification versioned?</td> <td>YES</td> </tr> <tr> <td>6.</td> <td>Is there traceability visible from each requirement to the business/marketing requirements?</td> <td>NO</td> </tr> <tr> <td>7.</td> <td>Is there traceability between the requirements and the use cases?</td> <td>NO</td> </tr> </table> <p>The question asks which of the items on the checklist are NOT met by the specification.</p> <p>Thus:</p> <p>a) Is not correct. Checklist item 1 is met                      b) Is correct. The set of checklist items [4, 6, 7] all three are not met                      c) Is not correct. Checklist item 5 is met                      d) Is not correct. Checklist item 5 is met</p>	1.	Is each requirement testable?	YES	2.	Does each requirement have acceptance criteria listed?	NO	3.	Does each requirement have a defined priority level?	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	TA-5.2.1	K3	2
1.	Is each requirement testable?	YES																								
2.	Does each requirement have acceptance criteria listed?	NO																								
3.	Does each requirement have a defined priority level?	NO																								
4.	Are the requirements uniquely identified?	NO																								
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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																								
37	c	<p>a) Is not correct. 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 we cannot see its version number and there is no traceability to business or marketing requirement</p> <p>b) Is not correct. The requirement is not testable as there is no measurable criteria to determine if the requirement is met or not</p> <p>c) Is correct. There is an identifier, but none of the other items are respected</p> <p>d) Is not correct. The requirement is not testable</p>	TA-5.2.1	K3	2																					

Question Number (#)	Correct Answer	Explanation / Rationale	Learning Objective (LO)	K-Level	Number of Points
38	a, c	a) Is correct. 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) Is not correct. The feature is defined and distinct c) Is correct. "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) Is not correct. Priority 1 is explicitly stated e) Is not correct. The user story conforms to the standard structure	TA-5.2.2	K3	2
39	a, c	a) Is correct. The Test Analyst maintains the keywords and data to reflect changes made b) Is not correct. The Test Analyst does not modularize the automation scripts c) Is 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) Is not correct. 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) Is not correct. 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
40	b	a) Is not correct. Test data preparation tools can "anonymize" data while still maintaining the internal integrity of that data b) Is correct. Test execution tools enable more tests to be run (not fewer) c) Is not correct. Test design tools can help the Test Analyst to choose the types of tests that are needed to obtain a targeted level of coverage d) Is not correct. 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	<p>a) Is not correct. The test basis to be used may vary depending on the test level</p> <p>b) Is correct. Expected results may include data and environmental postconditions</p> <p>c) Is not correct. 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</p> <p>d) Is not correct. The required detailed test infrastructure requirements may be defined, although in practice these may not be finalized until test implementation</p>	TA-1.4.3	K2	1
2	a	<p>a) Is correct. The tasks listed are consistent with those given in the syllabus</p> <p>b) Is not correct. Implementing test automation and finalizing the test environments are test implementation activities</p> <p>c) Is not correct. Organizing tests into test suites is a test implementation activity, identifying the test conditions is a test analysis activity</p> <p>d) Is not correct. Analyzing the test basis is a test analysis activity, selecting test case design techniques is a test design activity</p>	TA-1.6.1	K2	1