

TMAP®:
Quality for cross-functional teams

Sample exam

Version 1.0

Released 30-07-2020



Introduction

This is the sample exam for the certification "TMAP: Quality for cross-functional teams" which is part of the TMAP certification scheme. The requirements for this exam are described in the syllabus.

The format of the exam is multiple choice. There are 30 questions, 20 relate to K2 LOs, 10 relate to K3 LOs (K1 LOs are not explicitly examined). Each correctly answered question gives 1 point. To pass the exam, at least 66% of the points (that is 20 points) must be achieved.

The available time for the exam is 1 hour (60 minutes). This time is also sufficient for non-native English speakers to complete the exam. Currently the exam is only available in English, translations to other languages may follow in the future.

The exams and certificates are provided by the independent exam provider iSQI. The syllabus and other information can be found at: www.isqi.org.

For more information about the TMAP body of knowledge see www.tmap.net.

To contact the Sogeti academy in the Netherlands please contact academy.nl@sogeti.nl.

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Revision history

Version	Date	Author	Remarks
0.1	15-07-2020	Questions & Exercises team	New document
0.8	21-07-2020	Marcel van Donge	Document completed
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1.0	30-07-2020	Rik Marselis	Final version

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1. Questions

1.1. LO01 – The VOICE model of business delivery and IT delivery

Which of the following team roles has the main focus on defining the Value part of the VOICE model?

A. Agile coach.
B. Developer.
C. Product owner.
D. Tester.

1.2. LO02 – Indicators

Indicators are used to measure objectives. For each objective, match the proper indicator:

Objectives:
I. Support a specified number of users
II. Easy maintainability of the system
III. IT system based on Commercial off the shelf software
IV. High customer satisfaction

Indicators:
p. Mean time to fix problems
q. Business features implemented compared to Business features defined
r. Number of returning customers
s. Measurement of number of users that could not enter the system

A. I – r; II- s; III – q; IV – p.
B. I – s; II – p; III – q; IV- r.
C. I – r; II – p; III – s; IV – q.
D. I – p; II – s; III – q; IV – r.

1.3. LO03 – IT delivery models - general

What is Agile software development about?

A. It is about strict rules regarding team responsibility and trust to develop good software.
B. It is about how the values in the Agile Manifesto should be met.
C. It is about how Agile principles should be met.
D. It is about the behavior and attitude of the people.

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1.4. LO05 – DevOps

Which of the following descriptions is a part of the DevOps activity "Plan"?

A. Build a product roadmap for the delivery of pursued business value.
B. Inspect the performance of the CI/CD pipeline and improve where necessary.
C. Release the build - automatically - into production using a CI/CD pipeline.
D. Create a feedback loop and use tooling with which customers can give feedback on the services.

1.5. LO07 - Continuous quality engineering

Which term best fits the following practice?
The practice to integrate code into the main branch of a shared repository as early and often as possible.

A. Continuous Deployment.
B. Continuous Integration.
C. Continuous Monitoring.
D. Continuous Quality & Testing.

1.6. LO08 - Cross-functional teams

A company that delivers IT systems for the amusement-park business has a team with 7 members. Gerry, the team member with the most programming experience, will not be available in the second week of the two-week sprint. How does the team need to make sure the programming tasks still get done in this sprint?

A. The team asks Dorothy, an experienced programmer from another team, to replace Gerry so that the sprint goals can be met.
B. A few other team members work together with Gerry (using a pairing approach) in the first week of the sprint, so that they can pick up the necessary programming tasks in the remaining part of the sprint.
C. The team informs the product owner that the previously agreed sprint goals cannot be met and unfortunately all deliverables will be delayed to the next sprint. Heinz, the scrum master advises the remaining team members to use the now available time for training themselves on storytelling skills.
D. Jennifer, who has a lot of experience in system architecture, is asked to not pick up architecture tasks but instead work on development tasks to make up for the unavailability of Gerry. The other team members continue their tasks unchanged.

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1.7. LO09 – CI/CD pipeline

The developer in a DevOps team has finished building the source code and is ready to run unit tests. In which stage of the CI/CD pipeline will this unit testing happen?

A. Build Stage.
B. Business Test Stage.
C. Deploy for Business Test Stage.
D. Team Test Stage.

1.8. LO10 – Capabilities

Which capability matches with which continuous activity?

1. Continuous Delivery	I. Containerization
2. Continuous Deployment	II. Deployment of the build application
3. Continuous Integration	III. Live site telemetry
4. Continuous Monitoring	IV. Ready for deployment of the build application
5. Continuous Quality & Testing	V. Workflow supporting anomaly severity/ priority assignment related to the risk

A. 1 – II, 2 – III, 3 – V, 4 – IV, 5 – I
B. 1 – IV, 2 – II, 3 – I, 4 – III, 5 – V
C. 1 – IV, 2 – II, 3 – III, 4 – V, 5 – I
D. 1 – IV, 2 – V, 3 – III, 4 – II, 5 – I

1.9. LO11 – Introduction QA & testing topics

Which of the following topics is an Organizing topic?

A. Acceptance Criteria.
B. Infrastructure.
C. Reviewing.
D. Test Design.

1.10. LO13 – Responsibilities and roles

Which QA & testing responsibility belongs to the Developer role?

A. Author of unit/system tests.
B. Reviewer of acceptance criteria and test cases.
C. Author of non-functional tests.
D. Ensure that user stories are clearly understood.

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1.11. LO14 – Monitoring & control

Which of the following is an example of a non-functional system indicator?

A. Burndown charts.
B. Diskspace usage.
C. Number of unique visitors on a website.
D. Revenue increase.

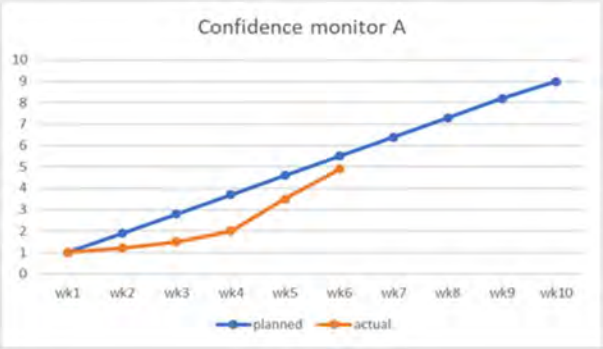
1.12. LO15 – Anomaly management

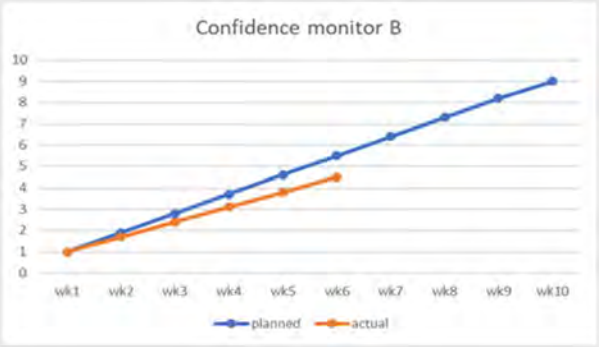
Should all anomalies be registered?

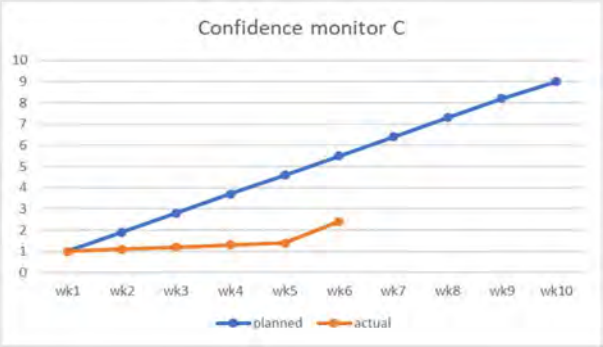
A. No, if the anomaly can be fixed directly there is no need to register it.
B. No, only anomalies that require investigation should be registered.
C. Yes, all anomalies should be registered to make retesting possible.
D. Yes, all anomalies should be registered to make process optimization possible.

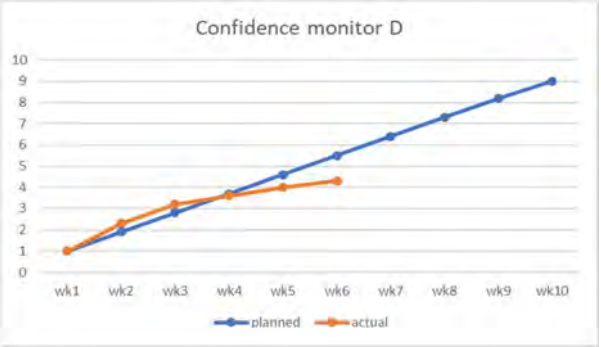
1.13. LO16 – Reporting and alerting

In the pictures, you see four examples of overview reports of a confidence monitor. Based on these overview reports, which reported situation is likely to have been caused because two team members unexpectedly left the team in week 3 and were not yet replaced?









A. Confidence monitor A.
B. Confidence monitor B.
C. Confidence monitor C.
D. Confidence monitor D.

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1.14. LO17 - Continuous improvement

Given the following improvement points from the retrospective:
P. Patricia notes that the quality of the review comments on the designs is relatively low.
Q. Quinten notes that the application is unstable.
R. Rachida notes that she has limited knowledge of test design techniques.
S. Sean notes that not all User Stories have been fully refined.

Which of the improvement points belongs to which improvement area?"

A. Quality of the application: Q; DevOps QA & Testing activities: P and R; QA & Testing skills of people: S.
B. Quality of the application: R and S; DevOps QA & Testing activities: Q; QA & Testing skills of people: P.
C. Quality of the application: Q; DevOps QA & Testing activities: P and S; QA & Testing skills of people: R.
D. Quality of the application: Q; DevOps QA & Testing activities: R; QA & Testing skills of people: P and S.

1.15. LO18- Quality risk analysis & test strategy

What is an example of a product risk with the classification “high”?

A. Due to the company's reorganization, the teams will be reshuffled in the coming weeks.
B. The login of the user app does not function correctly.
C. The colour on a settings screen used by the internal organization is not correct.
D. User acceptance testing.

1.16. LO19 - Acceptance criteria

When do you write acceptance criteria?

A. After the implementation of the user story.
B. Before the implementation of the user story.
C. During the implementation of the user story.
D. It doesn’t matter when you write them.

1.17. LO21 – Pull requests

What is the objective of a pull request?

A. The developer who changed the code asks another person to review the code and verify if the change was OK, and if so, commit it to the main branch.
B. To make sure the testers can run integration tests before merging to the development branch.
C. To ask other colleagues to help out with the story when the developer is stuck.
D. To update stakeholders on the progress of the project.

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1.18. LO24 – Investigate & assess outcome

You run a test scenario, it fails and you immediately fix the problem. Then you run the test scenario again. This time it fails again. What is this an example of?

A. An incorrect expected outcome.
B. Fault clustering.
C. Pair debugging.
D. Reproducing the fault.

1.19. LO26 – Specification and Example

Which approach should be used for a Specification and Example (SaE)-session to have the most ideas explored by the team gathered on one location?

A. Write & Review.
B. Three Amigo's.
C. Whole team workshop.
D. Four Amigo's.

1.20. LO27 – Personal, interpersonal and team skills

In a high-performing team of 5 members, John has extensive knowledge of business processes, Rajesh's primary talent lies in design, Peter's and Eva's in coding and Sarah's in testing.

Which of the following would be a good way of collaborating within this team to tackle a not very complex security issue in the code?

A. Mini waterfall.
B. Mobbing.
C. Pairing.
D. Static analysis.

1.21. LO28 – Test varieties

For what reason should you bring variety in testing?

A. To avoid the misconception that testing is just one straightforward activity.
B. To cover all important areas and aspects of the system under test.
C. To have an overview of needs and expectations of different people.
D. To make all stakeholders aware that there are different needs for testing.

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1.22. LO29 – Mutation testing tests the tests

If a mutant is not detected during mutation testing, what needs to be done in order to improve the test set?

A. One or more extra tests need to be added.
B. Nothing needs to be done, the test set is complete if mutants are not detected.
C. Remove the tests that do not fail.
D. Tests must be mutated so they will fail.

1.23. LO30 – Test Design - Introduction[1]

Which of the following is a description of the Appearance-oriented coverage group?

A. This group contains techniques that are based on processes.
B. This group contains techniques that are based on the behavior of decision points and the conditions that determine the result of a decision.
C. This group contains techniques that relate to how the system presents itself to the user or to other systems.
D. This group contains techniques that use the structure or behavior of the data that is used in the IT system.

1.24. LO31 – Test design entities relationships

Which of the following statements correctly describes the relation between the number of physical test cases and the number of test scenarios?

A. For every physical test case, one test scenario is made.
B. For every test scenario, one physical test case is made.
C. For multiple test scenarios, one physical test case is made.
D. One or more physical test cases are combined in one scenario.

[1] including basics of coverage-based and experience-based test design

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1.25. LO33 – Path testing

In the TestLand amusementpark children can participate in a fishing game.
They get 3 tries and if they catch at least one fish they get a prize. The process flow shows this process with two decisions.



How many test cases would be needed as a minimum for

- Test Depth Level-1 and
- Test Depth Level-2 (ensuring extra confidence for loops)?

A. TDL-1 – 1 test cases
   TDL-2 – 2 test cases
B. TDL-1 – 3 test cases
   TDL-2 – 4 test cases
C. TDL-1 – 2 test cases
   TDL-2 – 3 test cases
D. TDL-1 – 2 test cases
   TDL-2 – 2 test cases

1.26. LO36 – Condition - (CC), Decision - (DC) & Condition Decision Coverage (CDC)

How can the minimum number of test situations that are created with Condition Coverage (CC) be calculated?

A. The minimum number of test situations is all combinations of all condition values. This makes it two to the power of the number of conditions.
B. The minimum number of test situations is when every condition determines every outcome. This is the number of conditions +1.
C. The minimum of test situations is based on one true and one false situation.
D. There is no way to calculate the minimum number of test situations with CC.

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1.27. LO38 – Decision Table Testing

One of the main features of the TestLand App is the personalized Quality Guide. Based on the preferences of your group, the Quality Guide shows you a map with specially selected attractions for your group.

The map always shows attractions for adults. If your group has children it also shows you attractions suitable for children. If the age of the youngest child is 4 or less, the map also shows all attractions for infants and toddlers. During spring and summer, the app automatically shows indoor and outdoor attractions, in other seasons only the indoor attractions.

In the pictures you see 4 versions of a decision table that was created using multiple decision coverage (MCC). Which table is correct?"

Answer A

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	1	1	0	0	0	0
Age <= 4	1	1	0	0	1	1	0	0
Children in your group	1	0	1	0	1	0	1	0
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	-	x	-	x	-	x	-
Attractions for infants and toddlers	x	-	-	-	x	-	-	-
Outdoor attractions	x	-	x	x	-	-	-	-
Indoor attractions	x	-	x	x	x	-	x	x
Not possible	-	x	-	-	-	x	-	-

Answer B

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	1	1	0	0	0	0
Age <= 4	1	1	0	0	1	1	0	0
Children	1	0	1	0	1	0	1	0
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	x	x	-	x	x	x	-
Attractions for infants and toddlers	x	x	-	-	x	x	-	-
Outdoor attractions	x	x	x	x	-	-	-	-
Indoor attractions	x	x	x	x	x	x	x	x

Answer C

Conditions	Test situations TS 01	TS 02	TS 03	TS 04
Spring or summer	1	1	0	0
Age <= 4	1	0	1	0
Actions	**Expected outcon**			
Attractions for adults	x	x	x	x
Attractions for infants and toddlers	x	-	x	-
Outdoor attractions	x	x	x	x
Indoor attractions	x	x	-	-

Answer D

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	0	0	1	1	0	0
Age <= 4	1	0	1	0	1	0	1	0
Children in your group	0	1	0	1	0	1	0	1
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	-	x	-	x	-	x	-
Attractions for infants and toddlers	x	-	-	-	x	-	-	-
Free icecream	x	-	x	-	x	-	x	-
Outdoor attractions	x	-	x	x	-	-	-	-
Indoor attractions	x	-	x	x	x	-	x	x
Not possible	-	x	-	-	-	x	-	-

A. Table A.
B. Table B.
C. Table C.
D. Table D.

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1.28. LO42 – Boundary Value Analysis

The image below shows two boundaries. Which values need to be tested when using Equivalence partitioning (EP) and two-value Boundary value analysis (BVA) combined?



A. 50, 99, 100, 200, 300, 301 and 400.
B. 99, 100, 300 and 301.
C. 99, 100, 101, 299, 300 and 301.
D. 100, 150 and 300.

1.29. LO45 – Syntactic Test

Which of the following would be a good Syntactic test case?

A. The maximum length of a person to enter a rollercoaster is 2.20 meter.
B. The maximum number of fast passes for a roller coaster in any timeslot is 50.
C. The maximum length of an input field on a form is 256 characters.
D. The maximum time to load a webpage is 0.02 seconds.

1.30. LO47 – Exploratory testing and mob testing

Marleen is part of the TestLand Foodcourt DevOps team. She is taking up the task to execute one of the testing charters for Exploratory testing. She sees the test ideas and asks one of the senior team members how she can prepare test cases for the charter with so little information. How should her colleague respond?

A. Just take some time to prepare test cases in advance based on the regression set. Then execute them with a colleague.
B. The test ideas are not really important, just look at the scope and execute existing test cases with another team member.
C. Limit your test cases to these idea's because time is limited as is your colleagues' time.
D. The test ideas are a starting point to give you and a colleague an abundance of possibilities to test and experiment.

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2. Answers and feedback

2.1. LO01 – The VOICE model of business delivery and IT delivery

Which of the following team roles has the main focus on defining the Value part of the VOICE model?

A. Agile coach.
B. Developer.
C. Product owner.
D. Tester.

A. Incorrect. Only the product owner, business analyst and systems architect focus on the Value part.
B. Incorrect. See A.
C. Correct. (book chapter 3.3, table 3.1).
D. Incorrect. See A.

2.2. LO02 – Indicators

Indicators are used to measure objectives. For each objective, match the proper indicator:

Objectives:
I. Support a specified number of users
II. Easy maintainability of the system
III. IT system based on Commercial off the shelf software
IV. High customer satisfaction

Indicators:
p. Mean time to fix problems
q. Business features implemented compared to Business features defined
r. Number of returning customers
s. Measurement of number of users that could not enter the system

A. I – r; II- s; III – q; IV – p.
B. I – s; II – p; III – q; IV- r.
C. I – r; II – p; III – s; IV – q.
D. I – p; II – s; III – q; IV – r.

A. Incorrect. See answer B.
B. Correct. (Book 3.2 & 4.1).
C. Incorrect. See answer B.
D. Incorrect. See answer B.

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2.3. LO03 – IT delivery models - general

What is Agile software development about?

A. It is about strict rules regarding team responsibility and trust to develop good software.
B. It is about how the values in the Agile Manifesto should be met.
C. It is about how Agile principles should be met.
D. It is about the behavior and attitude of the people.

A. Incorrect. There are no specific rules regarding team responsibility and trust.
B. Incorrect. The Agile Manifesto is a guideline and has more to do with a mindset.
C. Incorrect. The Agile principles are a guideline and have more to do with a mindset.
D. Correct. It's a mindset. See book chapter 9.3.2.1.

2.4. LO05 – DevOps

Which of the following descriptions is a part of the DevOps activity "Plan"?

A. Build a product roadmap for the delivery of pursued business value.
B. Inspect the performance of the CI/CD pipeline and improve where necessary.
C. Release the build - automatically - into production using a CI/CD pipeline.
D. Create a feedback loop and use tooling with which customers can give feedback on the services.

A. Correct. (book 9.2.1).
B. Incorrect. This is part of Monitor.
C. Incorrect. This is part of Deploy.
D. Incorrect. This is part of Operate.

2.5. LO07 - Continuous quality engineering

Which term best fits the following practice?
The practice to integrate code into the main branch of a shared repository as early and often as possible.

A. Continuous Deployment.
B. Continuous Integration.
C. Continuous Monitoring.
D. Continuous Quality & Testing.

A. Incorrect. Continuous deployment is an extension of continuous delivery, where the application is not just delivered but also automatically deployed so that it runs on the production infrastructure.
B. Correct. (book: 6.2).
C. Incorrect. Continuous monitoring is about continuously gathering feedback of the indicators during live operation and use the information to forecast the future behavior of the system.
D. Incorrect. These are quality engineering activities.

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2.6. LO08 – Cross-functional teams

A company that delivers IT systems for the amusement-park business has a team with 7 members. Gerry, the team member with the most programming experience, will not be available in the second week of the two-week sprint. How does the team need to make sure the programming tasks still get done in this sprint?

A. The team asks Dorothy, an experienced programmer from another team, to replace Gerry so that the sprint goals can be met.
B. A few other team members work together with Gerry (using a pairing approach) in the first week of the sprint, so that they can pick up the necessary programming tasks in the remaining part of the sprint.
C. The team informs the product owner that the previously agreed sprint goals cannot be met and unfortunately all deliverables will be delayed to the next sprint. Heinz, the scrum master advises the remaining team members to use the now available time for training themselves on storytelling skills.
D. Jennifer, who has a lot of experience in system architecture, is asked to not pick up architecture tasks but instead work on development tasks to make up for the unavailability of Gerry. The other team members continue their tasks unchanged.

A. Incorrect. A cross-functional team should not just get someone from outside the team.
B. Correct. This is what happens in a cross-functional team.
C. Incorrect. The unavailability of Gerry is a scheduled event so the team should have taken this in consideration when discussing the sprint goals with the product owner.
D. Incorrect. The cross-functional team together is responsible for the quality, so therefore they cannot ask just one team member to replace another team member.

2.7. LO09 – CI/CD pipeline

The developer in a DevOps team has finished building the source code and is ready to run unit tests. In which stage of the CI/CD pipeline will this unit testing happen?

A. Build Stage.
B. Business Test Stage.
C. Deploy for Business Test Stage.
D. Team Test Stage.

A. Incorrect. The build stage is the stage that the developer has finished just now.
B. Incorrect. The business test stage is the stage in which test varieties such as user acceptance tests are performed.
C. Incorrect. The software first needs to be tested before it can be deployed to a business test.
D. Correct. (Book chapter 6.1).

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2.8. LO10 – Capabilities

Which capability matches with which continuous activity?

1.	Continuous Delivery	I.	Containerization
2.	Continuous Deployment	II.	Deployment of the build application
3.	Continuous Integration	III.	Live site telemetry
4.	Continuous Monitoring	IV.	Ready for deployment of the build application
5.	Continuous Quality & Testing	V.	Workflow supporting anomaly severity/ priority assignment related to the risk

A. 1 – II, 2 – III, 3 – V, 4 – IV, 5 – I
B. 1 – IV, 2 – II, 3 – I, 4 – III, 5 – V
C. 1 – IV, 2 – II, 3 – III, 4 – V, 5 – I
D. 1 – IV, 2 – V, 3 – III, 4 – II, 5 – I

A. Incorrect. E.g. deployment is not part of delivery but of deployment.
B. Correct. (book 6.3).
C. Incorrect. E.g. Live site telemetry is part of monitoring.
D. Incorrect. E.g. continuous monitoring is not directly related to deployment.

2.9. LO11 – Introduction QA & testing topics

Which of the following topics is an Organizing topic?

A. Acceptance Criteria.
B. Infrastructure.
C. Reviewing.
D. Test Design.

A. Incorrect. Acceptance criteria, reviewing, and test design are all Performing topics.
B. Correct. Infrastructure is an Organizing topic (Book chapter 11 and 12).
C. Incorrect. Acceptance criteria, reviewing, and test design are all Performing topics.
D. Incorrect. Acceptance criteria, reviewing, and test design are all Performing topics.

2.10. LO13 – Responsibilities and roles

Which QA & testing responsibility belongs to the Developer role?

A. Author of unit/system tests.
B. Reviewer of acceptance criteria and test cases.
C. Author of non-functional tests.
D. Ensure that user stories are clearly understood.

A. Correct. (table 16.1).
B. Incorrect. This is the Business analyst role (table 16.1).
C. Incorrect. This is the operations person's role (table 16.1).
D. Incorrect. This is the product owner role (table 16.1).

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2.11. LO14 – Monitoring & control

Which of the following is an example of a non-functional system indicator?

A. Burndown charts.
B. Diskspace usage.
C. Number of unique visitors on a website.
D. Revenue increase.

A. Incorrect. This is an example of a team performance indicator.
B. Correct. (Book chapter 17.1.4).
C. Incorrect. This is an example of a functional system indicator.
D. Incorrect. This is an example of a quality indicator.

2.12. LO15 – Anomaly management

Should all anomalies be registered?

A. No, if the anomaly can be fixed directly there is no need to register it.
B. No, only anomalies that require investigation should be registered.
C. Yes, all anomalies should be registered to make retesting possible.
D. Yes, all anomalies should be registered to make process optimization possible.

A. Correct. An anomaly should only be registered if it will not be fixed directly (book: 18.1).
B. Incorrect.
C. Incorrect.
D. Incorrect.

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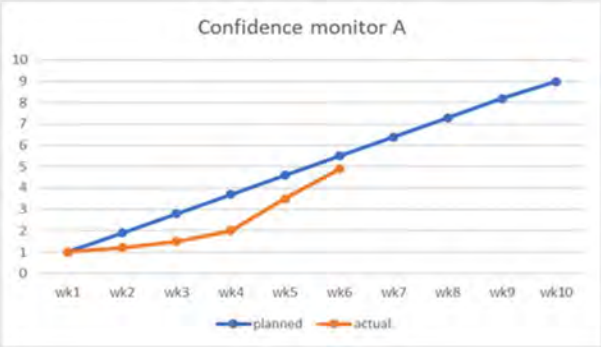
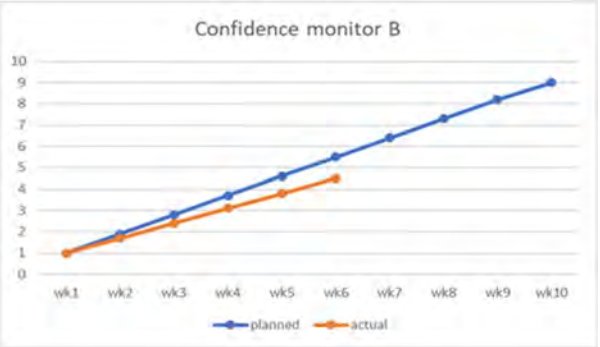
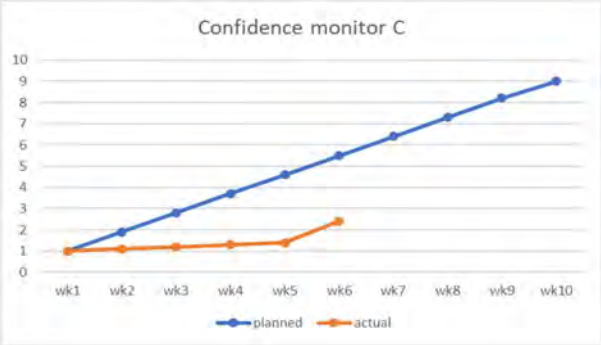
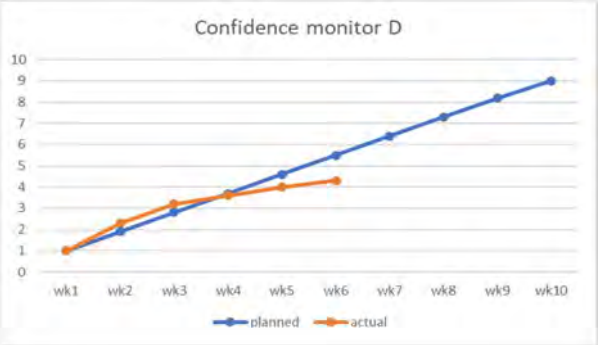
2.13. LO16 – Reporting and alerting

In the pictures, you see four examples of overview reports of a confidence monitor. Based on these overview reports, which reported situation is likely to have been caused because two team members unexpectedly left the team in week 3 and were not yet replaced?









A. Confidence monitor A.
B. Confidence monitor B.
C. Confidence monitor C.
D. Confidence monitor D.

A. Incorrect. Since week 4 the confidence rapidly rises, that's not likely to be caused by leaving people in week 3.
B. Incorrect. The trend has been too low since the first week, not since week 3.
C. Incorrect. The trend was already not good since the start and recently improved, which has no likely correlation with people leaving in week 3.
D. Correct. Since week 3 the confidence is clearly lagging behind the expectations.

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2.14. LO17 – Continuous improvement

Given the following improvement points from the retrospective:
P. Patricia notes that the quality of the review comments on the designs is relatively low.
Q. Quinten notes that the application is unstable.
R. Rachida notes that she has limited knowledge of test design techniques.
S. Sean notes that not all User Stories have been fully refined.

Which of the improvement points belongs to which improvement area?"

A. Quality of the application: Q; DevOps QA & Testing activities: P and R; QA & Testing skills of people: S.
B. Quality of the application: R and S; DevOps QA & Testing activities: Q; QA & Testing skills of people: P.
C. Quality of the application: Q; DevOps QA & Testing activities: P and S; QA & Testing skills of people: R.
D. Quality of the application: Q; DevOps QA & Testing activities: R; QA & Testing skills of people: P and S.

A. Incorrect. R is clearly an example of a skills problem of one person, not a process problem.
B. Incorrect. P is clearly a process problem.
C. Correct. (Book chapter 25.2)
D. Incorrect. S is clearly a process problem.

2.15. LO18 – Quality risk analysis & test strategy

What is an example of a product risk with the classification “high”?

A. Due to the company's reorganization, the teams will be reshuffled in the coming weeks.
B. The login of the user app does not function correctly.
C. The colour on a settings screen used by the internal organization is not correct.
D. User acceptance testing.

A. Incorrect. This is an example of a high process risk, not of a product risk.
B. Correct. This is an example of a product risk that is high, because of the frequency that a login of an app is being used.
C. Incorrect. This is an example of a product risk, but it is a low risk because the impact is limited. If the screen would be used by customers, the risk would be higher.
D. Incorrect. This is a possible quality measure to mitigate product risks and to increase confidence in the product.

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2.16. LO19 - Acceptance criteria

When do you write acceptance criteria?

A. After the implementation of the user story.
B. Before the implementation of the user story.
C. During the implementation of the user story.
D. It doesn't matter when you write them.

A. Incorrect. Acceptance criteria are written before the implementation of the user story.
B. Correct. (Book chapter 27).
C. Incorrect. Acceptance criteria are written before the implementation of the user story.
D. Incorrect. Acceptance criteria are written before the implementation of the user story.

2.17. LO21 – Pull requests

What is the objective of a pull request?

A. The developer who changed the code asks another person to review the code and verify if the change was OK, and if so, commit it to the main branch.
B. To make sure the testers can run integration tests before merging to the development branch.
C. To ask other colleagues to help out with the story when the developer is stuck.
D. To update stakeholders on the progress of the project.

A. Correct. (book:29.1.1.1).
B. Incorrect. Integration tests are run after merging to the main branch.
C. Incorrect. The objective of a pull request is to review the code and verify if the change was done properly, not to ask for help.
D. Incorrect. The objective of a pull request is to review the code and verify if the change was done properly, not to update stakeholders on the status of the project.

2.18. LO24 - Investigate & assess outcome

You run a test scenario, it fails and you immediately fix the problem. Then you run the test scenario again. This time it fails again. What is this an example of?

A. An incorrect expected outcome.
B. Fault clustering.
C. Pair debugging.
D. Reproducing the fault.

A. Incorrect, an incorrect expected outcome is an example of a test case fault..
B. Correct (Book chapter 34.3)
C. Incorrect, pair debugging is used in the process of investigating anomalies.
D. Incorrect, reproducing the fault is part of the process of creating an anomaly report. The intro text describes two different anomalies.

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2.19. LO26 - Specification and Example

Which approach should be used for a Specification and Example (SaE)-session to have the most ideas explored by the team gathered on one location?

A. Write & Review.
B. Three Amigo's.
C. Whole team workshop.
D. Four Amigo's.

A. Incorrect. This does not result in a lot of explored ideas and it can be done by people being distributed.
B. Incorrect. This results in only some explored ideas and doesn't require all people in one location (only the three involved people).
C. Correct. (See book chapter 35.2.1, figure 35.1).
D. Incorrect. This results in only some explored ideas and doesn't require all people in one location (only the four involved people).

2.20. LO27 - Personal, interpersonal and team skills

In a high-performing team of 5 members, John has extensive knowledge of business processes, Rajesh's primary talent lies in design, Peter's and Eva's in coding and Sarah's in testing.

Which of the following would be a good way of collaborating within this team to tackle a not very complex security issue in the code?

A. Mini waterfall.
B. Mobbing.
C. Pairing.
D. Static analysis.

A. Incorrect. Mini waterfall is not a high-performance IT delivery approach.
B. Incorrect. It is inefficient to have the whole team looking into the security issue.
C. Correct. Eva and Peter can discuss the security issue and fix it themselves without involving the rest of the team (book: chapter 36.1).
D. Incorrect. Static analysis is an automated activity.

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2.21. LO28 - Test varieties

For what reason should you bring variety in testing?

A. To avoid the misconception that testing is just one straightforward activity.
B. To cover all important areas and aspects of the system under test.
C. To have an overview of needs and expectations of different people.
D. To make all stakeholders aware that there are different needs for testing.

A. Incorrect. It's not about the image of testing.
B. Correct. (See book chapter 37, pg.268).
C. Incorrect. This is the base on which test varieties will be arranged.
D. Incorrect. This is about creating awareness amongst all stakeholders.

2.22. LO29 - Mutation testing tests the tests

If a mutant is not detected during mutation testing, what needs to be done in order to improve the test set?

A. One or more extra tests need to be added.
B. Nothing needs to be done, the test set is complete if mutants are not detected.
C. Remove the tests that do not fail.
D. Tests must be mutated so they will fail.

A. Correct. (book: 42.2).
B. Incorrect. Mutants should be detected, otherwise it is an indication that the tests do not detect all faults
C. Incorrect. Tests should not be removed. You only start mutation testing when the tests themselves have passed.
D. Incorrect. Existing tests should not change. You only start mutation testing when the tests themselves have passed and then make mutations in the code.

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2.23. LO30 - Test Design - Introduction[1]

Which of the following is a description of the Appearance-oriented coverage group?

A. This group contains techniques that are based on processes.
B. This group contains techniques that are based on the behavior of decision points and the conditions that determine the result of a decision.
C. This group contains techniques that relate to how the system presents itself to the user or to other systems.
D. This group contains techniques that use the structure or behavior of the data that is used in the IT system.

A. Incorrect. This is a description of the Process-oriented coverage group.
B. Incorrect. This is a description of the Condition-oriented coverage group.
C. Correct. See section 45.1.
D. Incorrect. This is a description of the Data-oriented coverage group.

2.24. LO31 – Test design entities relationships

Which of the following statements correctly describes the relation between the number of physical test cases and the number of test scenarios?

A. For every physical test case, one test scenario is made.
B. For every test scenario, one physical test case is made.
C. For multiple test scenarios, one physical test case is made.
D. One or more physical test cases are combined in one scenario.

A. Incorrect. Every test scenario is a combination of "n" physical test cases. (Book 44.1).
B. Incorrect. Every test scenario is a combination of "n" physical test cases. (Book 44.1).
C. Incorrect. Every test scenario is a combination of "n" physical test cases. (Book 44.1).
D. Correct. Every test scenario is a combination of "n" physical test cases. (Book 44.1).

[1] including basics of coverage-based and experience-based test design.

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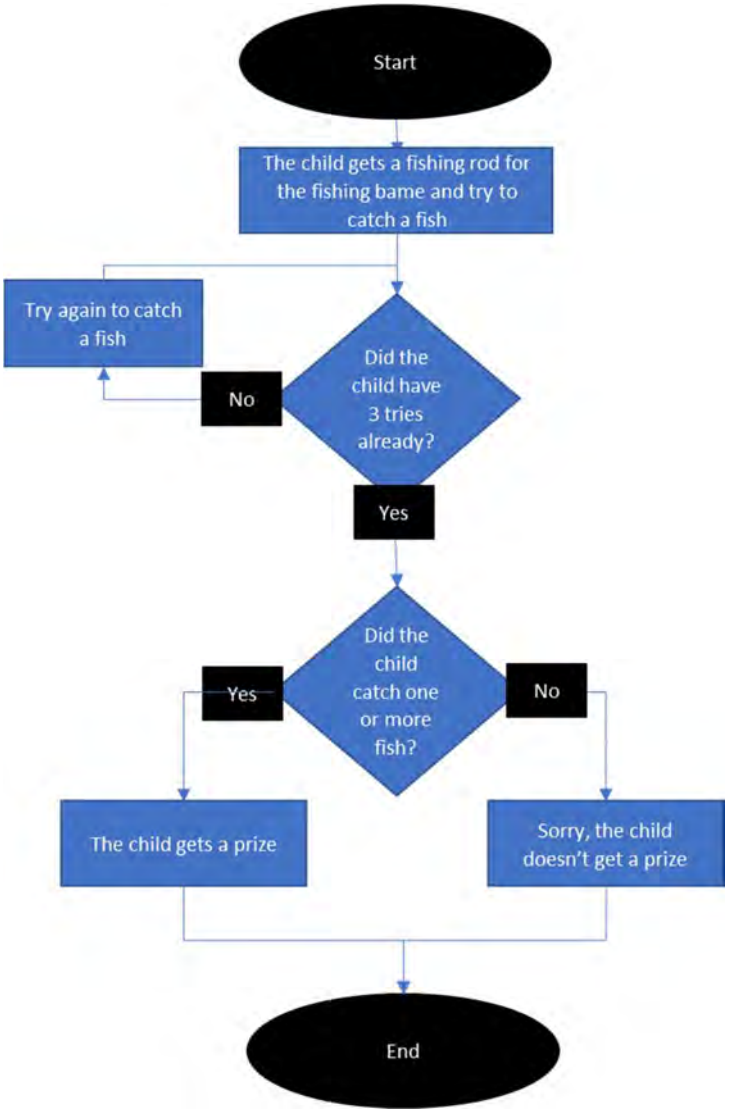
2.25. LO33 – Path testing

In the TestLand amusementpark children can participate in a fishing game.

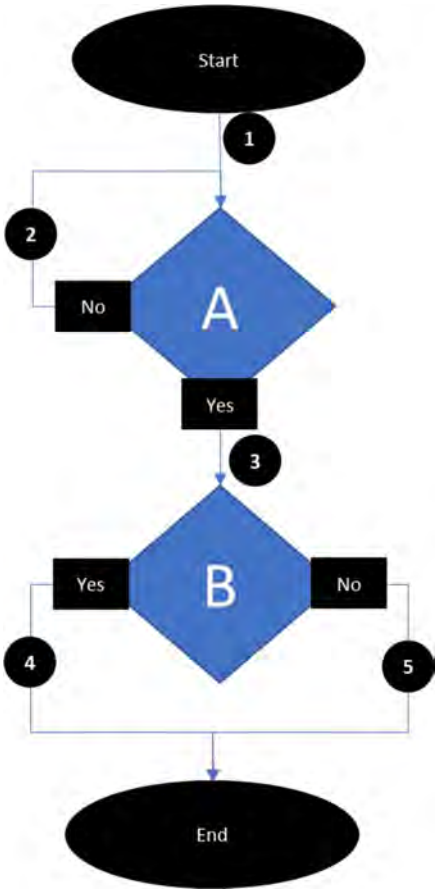
They get 3 tries and if they catch at least one fish they get a prize. The process flow shows this process with two decisions.



How many test cases would be needed as a minimum for

- Test Depth Level-1 and
- Test Depth Level-2 (ensuring extra confidence for loops)?

A. TDL-1 – 1 test cases
   TDL-2 – 2 test cases
B. TDL-1 – 3 test cases
   TDL-2 – 4 test cases
C. TDL-1 – 2 test cases
   TDL-2 – 3 test cases
D. TDL-1 – 2 test cases
   TDL-2 – 2 test cases



A. Incorrect, there are 2 paths from the last decision point to the end so there are at least 2 test cases.
B. Incorrect, TDL-1 can be reached with only 2 test cases.
C. Correct, see the picture and the solution in the excel sheet as presented on the next page.
D. Incorrect, TDL-1 can be reached with 2 test cases (so that is correct).
   TDL-2 can be reached with 2 test cases but then the loop was exercised zero times by one test case and exercised two times by the other test case. To achieve extra confidence the loop also has to be exercised once, which needs test case number 3.

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Solution for exercise Path testing LO33 worked out in the excel template for path testing.

Solution sample LO33 - Path-testing (Process Cycle Test technique and Algorithm Test technique)				
© Sogeti - www.TMAP.net	*(see the book "Quality for DevOps teams" chapter 46.3)*			
TDL-1	Test Depth Level-1 => every path has been travelled at least once			
	Paths are listed after the point they originate from, that is a decision point or "start"			
	Origination	*Test situations: path number(s)*		*note: fields to fill in have this color*
	Start	1		
	Decision point A	2, 3		
	Decision point B	4, 5		
	Create one or more test cases by combining the test situations, in such a way that every test case begins at "start" and stops at "end"			
	Test case 1	1,2,3,4		
	Test case 2	1,3,5		
TDL-2	Test Depth Level-2 => every combination of incoming and outgoing path has been travelled at least once			
	Paths are listed at the decision point as INcoming and/or as OUTgoing path			
	Decision point	*IN Incoming path(s)*	*OUT Outgoing path(s)*	*test situations: path combinations*
	Decision point A	1, 2	2, 3	1-2, 1-3, 2-2, 2-3
	Decision point B	3	4, 5	3-4, 3-5
	Create one or more test cases by combining the test situations, in such a way that every test case begins at "start" and stops at "end". For extra confidence make sure every loop is exercises Zero, One and Multiple times (this may require extra test cases).			
	Test case 1	1,3,4	used 1-3 and 3-4, zero times through the loop	
	Test case 2	1,2,2,3,5	used 1-2, 2-2, 2-3, 3-5, two times through the loop all test situation have now been used in test cases.	
	Test case 3	1,2,3,4	this is an aditional testcase for extra confidence, one time through the loop	

2.26. LO36 – Condition - (CC), Decision - (DC) & Condition Decision Coverage (CDC)

How can the minimum number of test situations that are created with Condition Coverage (CC) be calculated?

A. The minimum number of test situations is all combinations of all condition values. This makes it two to the power of the number of conditions.
B. The minimum number of test situations is when every condition determines every outcome. This is the number of conditions +1.
C. The minimum of test situations is based on one true and one false situation.
D. There is no way to calculate the minimum number of test situations with CC.

A. Incorrect. This is the minimum amount of test situations for MCC.
B. Incorrect. This is the minimum amount of test situations for MCDC.
C. Correct. See section 46.4.2.
D. Incorrect. There is a way of calculating the minimum number of test situations. See section 46.4.2.

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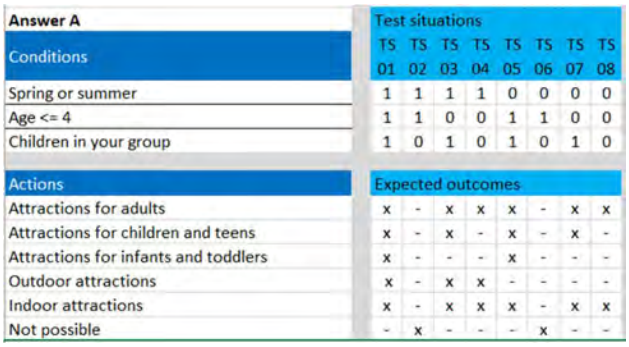
2.27. LO38 - Decision Table Testing

One of the main features of the TestLand App is the personalized Quality Guide. Based on the preferences of your group, the Quality Guide shows you a map with specially selected attractions for your group.

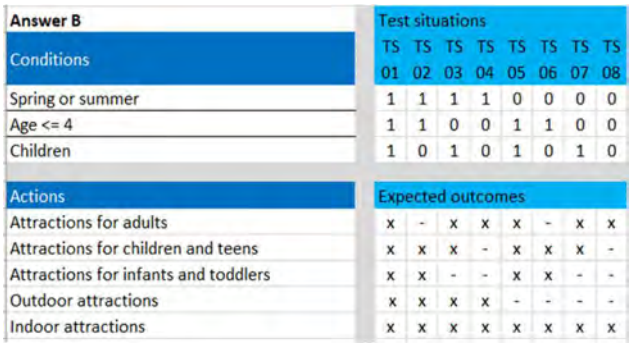
The map always shows attractions for adults. If your group has children it also shows you attractions suitable for children. If the age of the youngest child is 4 or less, the map also shows all attractions for infants and toddlers. During spring and summer, the app automatically shows indoor and outdoor attractions, in other seasons only the indoor attractions.

In the pictures you see 4 versions of a decision table that was created using multiple decision coverage (MCC). Which table is correct?"



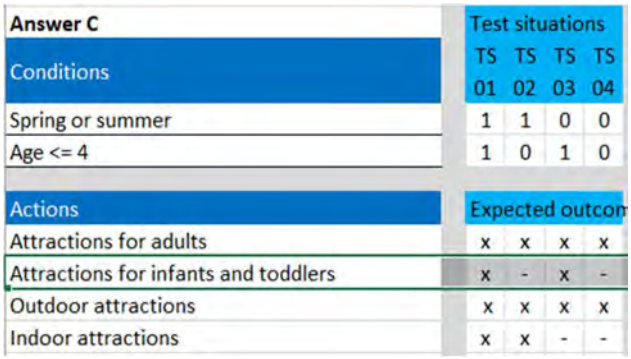
Answer A

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	1	1	0	0	0	0
Age <= 4	1	1	0	0	1	1	0	0
Children in your group	1	0	1	0	1	0	1	0
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	-	x	-	x	-	x	-
Attractions for infants and toddlers	x	-	-	-	x	-	-	-
Outdoor attractions	x	-	x	x	-	-	-	-
Indoor attractions	x	-	x	x	x	-	x	x
Not possible	-	x	-	-	-	x	-	-



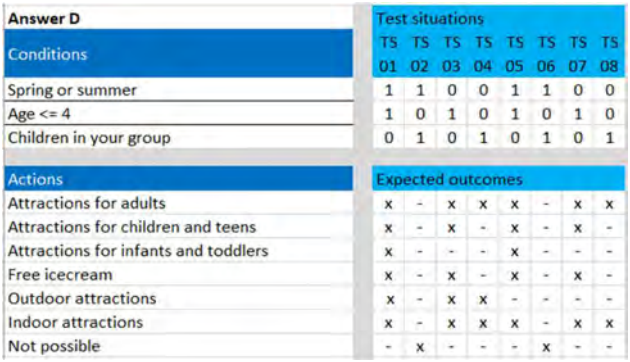
Answer B

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	1	1	0	0	0	0
Age <= 4	1	1	0	0	1	1	0	0
Children	1	0	1	0	1	0	1	0
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	x	x	-	x	x	x	-
Attractions for infants and toddlers	x	x	-	-	x	x	-	-
Outdoor attractions	x	x	x	x	-	-	-	-
Indoor attractions	x	x	x	x	x	x	x	x



Answer C

Conditions	Test situations TS 01	TS 02	TS 03	TS 04
Spring or summer	1	1	0	0
Age <= 4	1	0	1	0
Actions	**Expected outcon**			
Attractions for adults	x	x	x	x
Attractions for infants and toddlers	x	-	x	-
Outdoor attractions	x	x	x	x
Indoor attractions	x	x	-	-



Answer D

Conditions	Test situations TS 01	TS 02	TS 03	TS 04	TS 05	TS 06	TS 07	TS 08
Spring or summer	1	1	0	0	1	1	0	0
Age <= 4	1	0	1	0	1	0	1	0
Children in your group	0	1	0	1	0	1	0	1
Actions	**Expected outcomes**							
Attractions for adults	x	-	x	x	x	-	x	x
Attractions for children and teens	x	-	x	-	x	-	x	-
Attractions for infants and toddlers	x	-	-	-	x	-	-	-
Free icecream	x	-	x	-	x	-	x	-
Outdoor attractions	x	-	x	x	-	-	-	-
Indoor attractions	x	-	x	x	x	-	x	x
Not possible	-	x	-	-	-	x	-	-

A. Table A.
B. Table B.
C. Table C.
D. Table D.

A. Correct. (Book Chapter 46.4.5, template Decision Table Testing on www.TMAP.net).
B. Incorrect. Test situations 2 and 6 are not possible.
C. Incorrect. The condition for Children, yes or no, is missing.
D. Incorrect. Free ice creams are not mentioned in the case and the order of true and false is not correct.

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2.28. LO42 - Boundary Value Analysis

The image below shows two boundaries. Which values need to be tested when using Equivalence partitioning (EP) and two-value Boundary value analysis (BVA) combined?



A. 50, 99, 100, 200, 300, 301 and 400.
B. 99, 100, 300 and 301.
C. 99, 100, 101, 299, 300 and 301.
D. 100, 150 and 300.

A. Correct. These numbers test two-value BVA as well as EP (Book chapter 46.5).
B. Incorrect. These numbers only include BVA values but are missing EP values for the three equivalence classes.
C. Incorrect. These are only BVA values (and it is 3-value BVA).
D. Incorrect. These values only test the two boundaries and a value in the middle.

2.29. LO45 – Syntactic Test

Which of the following would be a good Syntactic test case?

A. The maximum length of a person to enter a rollercoaster is 2.20 meter.
B. The maximum number of fast passes for a roller coaster in any timeslot is 50.
C. The maximum length of an input field on a form is 256 characters.
D. The maximum time to load a webpage is 0.02 seconds.

A. Incorrect. This is a condition that could for example be tested with Boundary Value analysis.
B. Incorrect. This is a condition that should be tested with for example Condition Coverage.
C. Correct. Characteristics of data are validations in Syntactic test (book 46.7).
D. Incorrect. This is tested with Performance testing.

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2.30. LO47 – Exploratory testing and mob testing

Marleen is part of the TestLand Foodcourt DevOps team. She is taking up the task to execute one of the testing charters for Exploratory testing. She sees the test ideas and asks one of the senior team members how she can prepare test cases for the charter with so little information. How should her colleague respond?

A. Just take some time to prepare test cases in advance based on the regression set. Then execute them with a colleague.
B. The test ideas are not really important, just look at the scope and execute existing test cases with another team member.
C. Limit your test cases to these idea's because time is limited as is your colleagues' time.
D. The test ideas are a starting point to give you and a colleague an abundance of possibilities to test and experiment.

A. Incorrect. Exploratory testing is about simultaneously designing, executing and learning.
B. Incorrect. Test ideas are a starting point to give you and a colleague an abundance of possibilities to test and experiment.
C. Incorrect. Test ideas are a starting point to give you and a colleague an abundance of possibilities to test and experiment simultaneously within a timebox.
D. Correct. (Book 47.4.2.4).

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