



TMap® Suite

Test Engineer

Sample Exam

Edition 201704



TMap® Suite

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Introduction

This is the sample exam TMap Suite® Test Engineer. The EXIN exam rules and regulations apply to this exam.

This sample exam consists of 30 multiple-choice questions. Each multiple-choice question has a number of possible answers, of which only one is the correct answer.

The maximum number of points that can be obtained for this exam is 30. Each correct answer is worth one point. If you obtain 20 points or more you will pass.

The time allowed for this exam is 60 minutes.

Good luck!

Sample exam

1 / 30

What insight does testing provide?

- A. building the correct functionality
- B. quality and related risks
- C. training costs for use and management

2 / 30

During the test execution, the testers noticed that the system performance was very bad, despite the fact that there are no test cases designed for this.

To which way of testing does this form of information gathering belong?

- A. dynamic explicit testing
- B. dynamic implicit testing
- C. static testing

3 / 30

What should a tester do if an inconsistency is detected during the evaluation of the test basis?

- A. make the test basis consistent
- B. make the test infrastructure operational
- C. make an assumption
- D. report a defect

4 / 30

Why is it a good idea when taking a quality and test approach to start with a building block that is meaningful to the organisation?

- A. using a new process is cheaper
- B. non-testers don't have to bother about it
- C. it creates a good understanding of the new process

5 / 30

According to TMap HD what does the element 'Integrate' mean in the process of building IT solutions?

- A. all 'building blocks' have to be integrated
- B. all disciplines must work better together to increase efficiency, speed and quality
- C. all tools used have to be standardised to increase efficiency, speed and quality
- D. all roles, such as designer, programmer and tester, must be able to be carried out by one person

6 / 30

When finding a balance in projects, it is often about *building the right thing*, *building the thing right* and *building it fast*.

What is the **first** priority of the person responsible for developing in the project?

- A. building the right thing
- B. building the thing right
- C. building it fast

7 / 30

What does the quality characteristic *manageability* mean?

- A. The degree to which the user is able to introduce enhancements or variations on the information system without amending the software
- B. The ease and speed with which the information system can be resumed following a breakdown
- C. The ease with which the information system can be placed and maintained in an operational condition.
- D. The ease with which the information system can be adapted to new requirements of the user

8 / 30

For a system, you want to test the degree to which the manual procedures interconnect with the automated information system and the workability of these manual procedures for the organisation.

To which quality characteristic does this description relate?

- A. usability
- B. connectivity
- C. functionality
- D. suitability

9 / 30

Usability testing has a great deal to do with the quality characteristic *user friendliness*.

To which other quality characteristic does usability testing relate?

- A. manageability
- B. usability
- C. reusability
- D. portability

10 / 30

When is a test environment considered as good?

- A. if it is possible to determine to a sufficient degree whether or not the test object meets the previously set requirements
- B. if it is set up and tested by qualified people
- C. if it meets the previously set requirements
- D. if it is as much as possible like the production environment and the test data is consistent

11 / 30

What testing tool can be used to gain insight into the maintainability of the software?

- A. Code-analysis tool
- B. Debugger
- C. Unit test tool

12 / 30

Using a tool 'forces' a standard way of working, disabling the human factor.

What advantage does this create?

- A. higher quality of testing
- B. higher productivity
- C. more happiness at work
- D. expansion of testing options

13 / 30

Why is the checklist 'test design techniques' used in the TMap Preparation phase?

- A. to check the test basis for testability
- B. to create test cases
- C. to create the test strategy
- D. to assign the test design techniques to the combination of quality characteristic and test depth

14 / 30

What is the aim of executing an intake on the test object in the Execution phase?

- A. Preparing the starting points required for the execution of the test cases
- B. Establishing whether the delivered parts of the test object function in such a way that adequate testing can be carried out
- C. establishing the testability of the information which defines the desired system behaviour
- D. obtaining test results on the basis of which evaluation (parts) of the test object can take place

15 / 30

What kind of insight does the *testability review report* provide?

- A. an estimate of the test program
- B. the quality of (parts of) the information system
- C. the quality of the test basis and its impact on the planned test program
- D. the quality of the test cases

16 / 30

Test data is created in three ways.

Which way is preferred from a technical testing point of view?

- A. use of production data
- B. entering through separate front-end software
- C. entering through regular system functions

17 / 30

TMap uses the following two test approaches: experienced based and coverage based testing.

Which type of testing belongs to experience-based testing?

- A. Appearance
- B. Data
- C. Exploratory
- D. Process

18 / 30

You decide to test a process flow coverage-based. A coverage type has been chosen from the *Process* coverage type group.

Which coverage type has been chosen?

- A. Decision points
- B. Boundary value analysis
- C. Operational profiles
- D. Paths

19 / 30

If a defect report is created, the severity and priority fields have to be completed as a minimum.

Why is a difference made between severity and priority?

- A. Severity is important for management and priority for the solution-finder
- B. Severity is important for the solution-finder and priority for management
- C. High severity implies high decision priority
- D. High priority implies high severity

20 / 30

Although a well-executed development test (UT, UIT) has advantages such as finding and resolving defects faster and more economically, this doesn't always happen.

What is the reason for this?

- A. defects in (e.g.) underlying operating systems, the database and network cannot be found
- B. in certain development approaches, namely in XP, this is explicitly not part of the approach
- C. the developer often gives priority to timely delivery rather than to product quality
- D. determining the product quality is the responsibility of the user

21 / 30

See the specification below:

```
IF      A <= 10 AND B = 12 OR C >= 10
      THEN X := 40
ENDIF
```

```
IF      D <= 14
      THEN X := 50
ELSE    X := 0
ENDIF
```

Of what concept is $D \leq 14$ an example?

- A. action
- B. condition
- C. operator
- D. test situation

22 / 30

Into how many physical test cases is every logical test case concretely worked out?

- A. in one physical test case
- B. in one or more physical test cases
- C. in a maximum of one physical test case
- D. in zero, one or more physical test cases

23 / 30

See the decision below:

$R = A \text{ and } (B \text{ or } C) \text{ and } D$

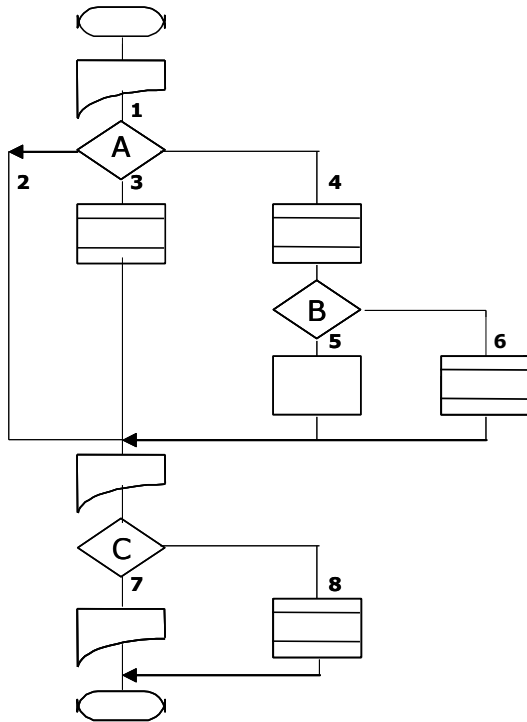
The coverage type decision points modified condition/decision coverage is applied to the decision.

In which test situation does the value of D determine the outcome of R as true?

- A. A=true B=true C=false D=true
- B. A=false B=true C=true D=true
- C. A=true B=false C=false D=true
- D. A=false B=false C=false D=true

24 / 30

See the procedure flow below:



How many test situations are generated if the coverage type paths, test depth level 3, is used?

- A. 3
- B. 8
- C. 10
- D. 13

25 / 30

The test basis for a test consists of rules that specify to which criteria an attribute should comply in order to be accepted as valid input and/or output by the system. The validity of the input data must be tested.

Which test design technique is suitable and focuses on this test situation?

- A. Data Combination Test
- B. Data Cycle Test
- C. Process Cycle Test
- D. Syntactic Test

26 / 30

The specifications of a given subsystem contain no pseudo-code or other structured descriptions. They do, however, provide information about the data that plays a role in that subsystem and its influence on the functionality.

Which test design technique is used to test the functionality?

- A. Data Combination Test
- B. Elementary Comparison Test
- C. Data Cycle Test
- D. Process Cycle Test

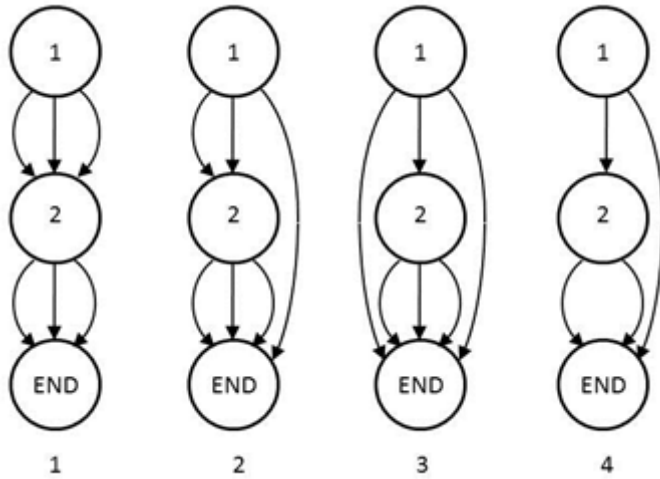
27 / 30

See the specification and image below:

The Elementary Comparison Test design technique with coverage type decision points with modified condition/decision coverage has been applied on the following specification.

```
IF      A AND B
THEN    C=50
ELSE
        IF  C AND D
        THEN Error message
        ENDIF
ENDIF
```

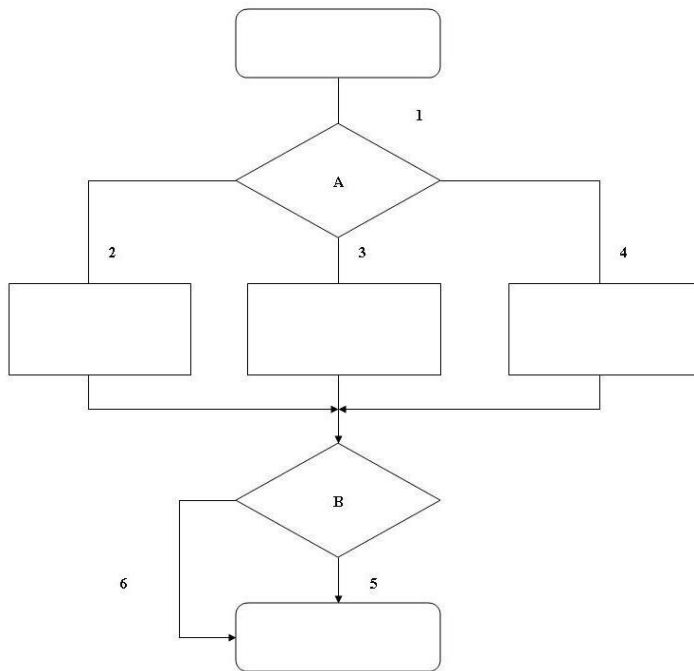
Which is the corresponding graph belongs?



- A. 1
- B. 2
- C. 3
- D. 4

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See the image below:



What is the **minimum** number of logical test cases that is generated using the Process Cycle Test if the coverage type paths test depth level 1 is used?

- A. 2
- B. 3
- C. 5
- D. 6

29 / 30

See the specification below:

```
IF          customer no. > 350 AND article group = 480
            THEN          reduction = 10 %
ENDIF
IF          region code = 6 OR region code = 9
            THEN          invoice type = K
ELSE        invoice type = B
ENDIF
```

What is the **minimum** number of logical test cases required to test all test situations when using the Elementary Comparison Test with coverage type decision points modified condition/decision coverage?

- A. 2
- B. 3
- C. 4
- D. 6

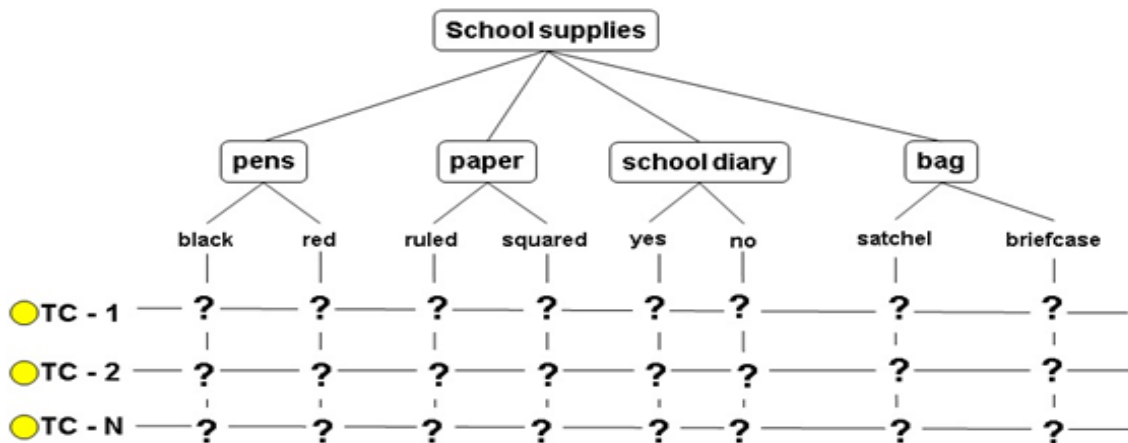
30 / 30

See the image below:

To test the purchase of school items, logical test cases have to be created according to the Data Combination Test. It is agreed that the test should be done with the average thoroughness. This means that pairwise testing should be applied to all parameters:

- pens- paper –school diary– bag)

The test cases are designed using the classification tree below.



What is the **minimum** number of test cases that will be generated when using the Pairwise Testing technique?

- A. 2
- B. 4
- C. 5
- D. 16

Answer Key

1 / 30

What insight does testing provide?

- A. building the correct functionality
- B. quality and related risks
- C. training costs for use and management

- A. Incorrect. It is not the primary purpose to establish whether or not the correct functionality is built or whether or not the functionality is correctly built, whereas non-functional aspects also play a role.
- B. Correct. In testing, it's about the level of quality and the related risks. (Lit. A § 4.1).
- C. Incorrect. Testing is not training for users and operations. Often it is a secondary task, for which a separate budget and time must be made available.

2 / 30

During the test execution, the testers noticed that the system performance was very bad, despite the fact that there are no test cases designed for this.

To which way of testing does this form of information gathering belong?

- A. dynamic explicit testing
- B. dynamic implicit testing
- C. static testing

- A. Incorrect. In dynamic explicit testing, explicit test cases have been designed to gather information about the specific quality characteristic.
- B. Correct. During dynamic testing, implicit information about other quality characteristics can be gathered, where no test cases have been explicitly designed (= dynamic implicit testing). (Lit. A § 4.1.2).
- C. Incorrect. Static testing is the assessment of documents without running software.

3 / 30

What should a tester do if an inconsistency is detected during the evaluation of the test basis?

- A. make the test basis consistent
- B. make the test infrastructure operational
- C. make an assumption
- D. report a defect

- A. Incorrect. The tester is not the person responsible for the test basis and therefore should not make any changes. Inconsistencies are defects.
- B. Incorrect. It's about assessing a test basis (intake test basis) and it is not an intake of the test infrastructure.
- C. Incorrect. The basis for the test is the test basis and the tester should never make assumptions on this.
- D. Correct. The basis for the test is the test basis and if this is incomplete, or inconsistent, or contains errors, then it is a defect. (Lit. A § 4.2).

4 / 30

Why is it a good idea when taking a quality and test approach to start with a building block that is meaningful to the organisation?

- A. using a new process is cheaper
- B. non-testers don't have to bother about it
- C. it creates a good understanding of the new process

- A. Incorrect. The reward for implementing a new process is not dependent on using the first 'building block', but on how many/ which 'building blocks' are used.
- B. Incorrect. Implementing a quality and test approach involves all project participants, not just testers (or team members in a testing role).
- C. Correct. Implementing an entirely new process can lead to a limited understanding of the process. It's better to implement stepwise by starting with 'building blocks' that, for example, resolve a particular existing problem. (Lit. A § 1.1).

5 / 30

According to TMap HD what does the element 'Integrate' mean in the process of building IT solutions?

- A. all 'building blocks' have to be integrated
 - B. all disciplines must work better together to increase efficiency, speed and quality
 - C. all tools used have to be standardised to increase efficiency, speed and quality
 - D. all roles, such as designer, programmer and tester, must be able to be carried out by one person
-
- A. Incorrect. Dependent on the need, building blocks can possibly be implemented after changes or new development. This is done, preferably, in stages and because of this not all building blocks have to be used.
 - B. Correct. 'Integrate' means that all disciplines involved in the process of building IT solutions have to work better to increase efficiency, speed and quality. (Lit. A § 1.2).
 - C. Incorrect. Standardization of testing offers opportunities for automation of, for example, test execution. Is part of 'Industrialize', not of 'Integrate'.
 - D. Incorrect. People need to have the correct skills and knowledge to be able to perform their work, but not all roles have to be able to be carried out by one person.

6 / 30

When finding a balance in projects, it is often about *building the right thing*, *building the thing right* and *building it fast*.

What is the **first** priority of the person responsible for developing in the project?

- A. building the right thing
 - B. building the thing right
 - C. building it fast
-
- A. Incorrect. *Building the right thing* is in particular a priority for the client, stakeholder and/or product owner.
 - B. Correct. *Building the thing right* is the first priority of the developer and/or programmer. (Lit. A § 2.6).
 - C. Incorrect. *Building it fast* is in particular a priority for the project leader and/or scrum master.

7 / 30

What does the quality characteristic *manageability* mean?

- A. The degree to which the user is able to introduce enhancements or variations on the information system without amending the software
 - B. The ease and speed with which the information system can be resumed following a breakdown
 - C. The ease with which the information system can be placed and maintained in an operational condition.
 - D. The ease with which the information system can be adapted to new requirements of the user
-
- A. Incorrect. This is flexibility.
 - B. Incorrect. This is recoverability as a characteristic of the quality characteristic continuity.
 - C. Correct. This is the description of manageability (Lit. A § 4.4).
 - D. Incorrect. This is a part of maintainability.

8 / 30

For a system, you want to test the degree to which the manual procedures interconnect with the automated information system and the workability of these manual procedures for the organisation.

To which quality characteristic does this description relate?

- A. usability
 - B. connectivity
 - C. functionality
 - D. suitability
-
- A. Incorrect. Usability relates to the degree to which the information system is tailored to the organisation and the profile of the end users for whom it is intended, as well as the degree to which the information system contributes to achieve company goals.
 - B. Incorrect. Connectivity is the ease with which an interface can be created with another information system or within the information system and can be changed.
 - C. Incorrect. When it comes to functionality, it's about the certainty that the system processes the information accurately and completely and in line with the description in the specifications.
 - D. Correct. This description relates to suitability. (Lit. A § 4.4).

9 / 30

Usability testing has a great deal to do with the quality characteristic *user friendliness*.

To which other quality characteristic does usability testing relate?

- A. manageability
- B. usability
- C. reusability
- D. portability

- A. Incorrect. The quality characteristics that are most related to usability are user-friendliness and usability.
- B. Correct. Usability, alongside user-friendliness, relates more to usability testing. (Lit. A § 4.4).
- C. Incorrect. The quality characteristics that relate most to usability testing are user-friendliness and usability.
- D. Incorrect. The quality characteristics that relate most to usability are user-friendliness and usability.

10 / 30

When is a test environment considered as good?

- A. if it is possible to determine to a sufficient degree whether or not the test object meets the previously set requirements
- B. if it is set up and tested by qualified people
- C. if it meets the previously set requirements
- D. if it is as much as possible like the production environment and the test data is consistent

- A. Correct. A good test environment is set up in such a way that it makes it possible to sufficiently determine whether or not the test object meets the previously set requirements. (Lit. A § 4.5).
- B. Incorrect. Setting up a testing environment using qualified people is no guarantee that it can be sufficiently determined whether or not the test object meets the previously set requirements.
- C. Incorrect. This still doesn't mean that the test environment makes it possible to sufficiently determine whether or not the test object meets the previously set requirements.
- D. Incorrect. The content and structure of the test environment depends on the test level.

11 / 30

What testing tool can be used to gain insight into the maintainability of the software?

- A. Code-analysis tool
- B. Debugger
- C. Unit test tool

- A. Correct. A code analysis tool can be used to carry out statistical analysis on the code, in order to be able to determine aspects such as maintainability. (Lit. A § 4.4).
- B. Incorrect. A debugger is used to trace the cause of a specific fault.
- C. Incorrect. A unit test tool is used to create test scripts and automatically test a unit or a piece of code in a test harness.

12 / 30

Using a tool 'forces' a standard way of working, disabling the human factor.

What advantage does this create?

- A. higher quality of testing
- B. higher productivity
- C. more happiness at work
- D. expansion of testing options

- A. Correct. By disabling the human factor, preventing errors in handling, the quality of testing is higher. (Lit. A § 4.6).
- B. Incorrect. Higher productivity is achieved by more tests being carried out unattended (e.g. during the night), but not by a standard way of working.
- C. Incorrect. Automation of routine activities leads to more happiness at work, not the standard way of working.
- D. Incorrect. For some tests, e.g. stress tests, tools are essential. Using such tools creates more testing options, but is not forced by a standard way of working.

13 / 30

Why is the checklist 'test design techniques' used in the TMap Preparation phase?

- A. to check the test basis for testability
 - B. to create test cases
 - C. to create the test strategy
 - D. to assign the test design techniques to the combination of quality characteristic and test depth
-
- A. Correct. Using the test design techniques checklist, you can check whether or not, based on the given test basis, the test design techniques can be applied and whether or not the test basis is therefore testable. (Lit. A § 4.3).
 - B. Incorrect. The test cases are created in the Specification phase.
 - C. Incorrect. The test strategy is set up in the Planning Phase. Based on this, test design techniques are allocated, which are then used in checklists to check the testability of the test basis in the Preparation phase.
 - D. Incorrect. Allocating test design techniques to the combination of quality characteristics and test depth is done by the test manager/coordinator in the Planning phase.

14 / 30

What is the aim of executing an intake on the test object in the Execution phase?

- A. Preparing the starting points required for the execution of the test cases
 - B. Establishing whether the delivered parts of the test object function in such a way that adequate testing can be carried out
 - C. establishing the testability of the information which defines the desired system behaviour
 - D. obtaining test results on the basis of which evaluation (parts) of the test object can take place
-
- A. Incorrect. This is the aim of preparing the starting points.
 - B. Correct. The aim is to establish whether the delivered parts of the test object function in such a way that adequate testing can be carried out. (Lit. A § 4.3).
 - C. Incorrect. This is the aim of assessing the test basis in the Preparation phase.
 - D. Incorrect. This is the aim of executing (re)tests.

15 / 30

What kind of insight does the *testability review report* provide?

- A. an estimate of the test program
 - B. the quality of (parts of) the information system
 - C. the quality of the test basis and its impact on the planned test program
 - D. the quality of the test cases
-
- A. Incorrect. Gaining insight into the estimate of the test program is not part of the aims of the 'testability review report', but is an activity related to setting up the master test plan.
 - B. Incorrect. Insight into the quality of (parts) of the information system is gained during the test object intake and test execution.
 - C. Correct. Providing feedback on the quality of the test basis and its impact of this on the planned test program is one of the aims of the *testability review report*. (Lit. A § 4.3).
 - D. Incorrect. The 'testability review report' provides no insight into the test cases, only into whether the selected test design techniques are suitable to being applied on this test basis and vice versa, whether the test basis is suitable to being used for the selected test design techniques.

16 / 30

Test data is created in three ways.

Which way is preferred from a technical testing point of view?

- A. use of production data
 - B. entering through separate front-end software
 - C. entering through regular system functions
-
- A. Incorrect. Using production data can mean a lot of searching for the right starting point data in a test case.
 - B. Incorrect. Entering with separate front-end software increases the chance of inconsistencies.
 - C. Correct. Entering with regular system functions has the most advantages and fewest disadvantages from a technical testing point of view. (Lit. A § 4.3).

17 / 30

TMap uses the following two test approaches: experienced based and coverage based testing.

Which type of testing belongs to experience-based testing?

- A. Appearance
- B. Data
- C. Exploratory
- D. Process

- A. Incorrect. This is a way of testing that belongs to coverage-based testing.
- B. Incorrect. This is a way of testing that belongs to coverage-based testing.
- C. Correct. Exploratory testing, Error Guessing and Checklist based testing are ways of testing that belong to experienced based testing. (Lit. A § 2.9).
- D. Incorrect. This is a way of testing that belongs to coverage-based testing.

18 / 30

You decide to test a process flow coverage-based. A coverage type has been chosen from the *Process* coverage type group.

Which coverage type has been chosen?

- A. Decision points
- B. Boundary value analysis
- C. Operational profiles
- D. Paths

- A. Incorrect. The coverage type 'Decision points' tests conditions, not paths.
- B. Incorrect.' The coverage type 'Boundary value analysis' tests data, not paths.
- C. Incorrect. The coverage type 'Operational profiles' tests 'appearance', not paths.
- D. Correct. A 'process flow' is the best way to test the coverage type 'Paths' from the 'Process' coverage type group. (Lit. A § 2.9).

19 / 30

If a defect report is created, the severity and priority fields have to be completed as a minimum.

Why is a difference made between severity and priority?

- A. Severity is important for management and priority for the solution-finder
 - B. Severity is important for the solution-finder and priority for management
 - C. High severity implies high decision priority
 - D. High priority implies high severity
-
- A. Correct. The weighed severity indicates the importance for management and priority shows how quickly the defect should be resolved. (Lit. A § 4.7).
 - B. Incorrect. The provisional severity category is not part of the minimum fields in a defect report.
 - C. Incorrect. A high severity defect can sometimes be resolved with a workaround and can therefore have a lower priority.
 - D. Incorrect. A high priority, e.g. if the test progress is impacted, does not automatically mean that damage to the organization (severity) is also high.

20 / 30

Although a well-executed development test (UT, UIT) has advantages such as finding and resolving defects faster and more economically, this doesn't always happen.

What is the reason for this?

- A. defects in (e.g.) underlying operating systems, the database and network cannot be found
 - B. in certain development approaches, namely in XP, this is explicitly not part of the approach
 - C. the developer often gives priority to timely delivery rather than to product quality
 - D. determining the product quality is the responsibility of the user
-
- A. Incorrect. Faults in underlying operating systems, the database and network can be properly found with development tests and prevents many problems during the system/acceptance test.
 - B. Incorrect. In XP, Test Driven Development is mainly promoted, or rather development tests are considered proper as well as important.
 - C. Correct. Developers are often under incredible time pressure. Criteria that they are measured against are often related to time and functionality delivered, rather than quality. (Lit. A § 4.8).
 - D. Incorrect. Determining the quality is the responsibility of those involved, also the developer.

21 / 30

See specification below:

```
IF      A <= 10 AND B = 12 OR C >= 10
      THEN X := 40
ENDIF
```

```
IF      D <= 14
      THEN X := 50
ELSE    X := 0
ENDIF
```

Of what concept is $D \leq 14$ an example?

- A. action
- B. condition
- C. operator
- D. test situation

- A. Incorrect. An action contains all activities that need to be carried out for the system to activate processing.
- B. Correct. $D \leq 14$ is an example of a condition. (Lit. A § 3.4).
- C. Incorrect. An example of an operator in the specification is AND.
- D. Incorrect. A test situation is an isolated circumstance under which the test object displays a specific behaviour and which must be tested.

22 / 30

Into how many physical test cases is every logical test case concretely worked out?

- A. in one physical test case
 - B. in one or more physical test cases
 - C. in a maximum of one physical test case
 - D. in zero, one or more physical test cases
-
- A. Correct. Every logical test case is concretely worked out into one physical test case. (Lit. A § 3.2.2).
 - B. Incorrect. Every logical test case is concretely worked out into one physical test case.
 - C. Incorrect. Every logical test case is concretely worked out into one physical test case.
 - D. Incorrect. Every logical test case is concretely worked out into one physical test case.

23 / 30

See the decision below:

$R = A \text{ and } (B \text{ or } C) \text{ and } D$

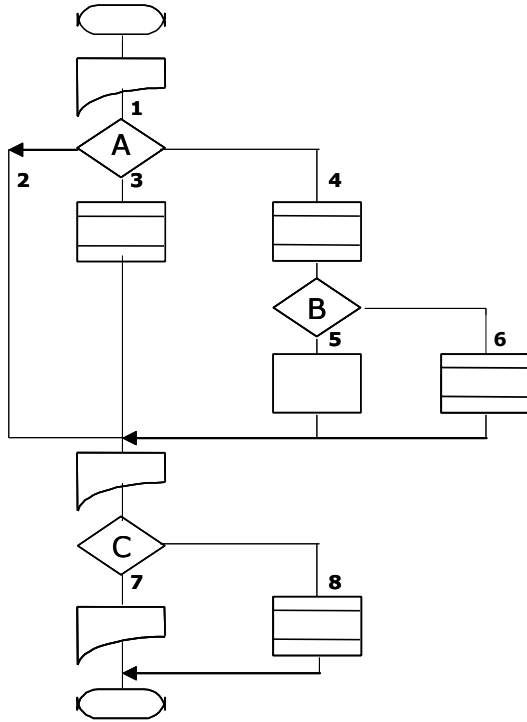
The coverage type decision points modified condition/decision coverage is applied to the decision.

In which test situation does the value of D determine the outcome of R as true?

- A. A=true B=true C=false D=true
 - B. A=false B=true C=true D=true
 - C. A=true B=false C=false D=true
 - D. A=false B=false C=false D=true
-
- A. Correct. R changes from true to false if D is false. (Lit. A § 3.4.2.4).
 - B. Incorrect. The result remains (due to A) false if D is false.
 - C. Incorrect. The result remains (due to B and C) false if D is false.
 - D. Incorrect. The result remains (due to A, B and C) false if D is false.

24 / 30

See the procedure flow below:



How many test situations are generated if the coverage type paths, test depth level 3, is used?

- A. 3
- B. 8
- C. 10
- D. 13

- A. Incorrect. There are 3 decision points. There are 10 test situations.
- B. Incorrect. This is the result when using test depth level1. There are 10 test situations.
- C. Correct. Namely: 1-2-7; 1-2-8; 1-3-7; 1-3-8; 1-4-5; 1-4-6; 4-5-7; 4-5-8; 4-6-7; 4-6-8. (Lit. A § 3.3.2).
- D. Incorrect. That is the result when using test depth level2. There are 10 test situations.

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The test basis for a test consists of rules that specify to which criteria an attribute must comply in order to be accepted as valid input and/or output by the system. The validity of the input data must be tested.

Which test design technique is suitable and focuses on this test situation?

- A. Data Combination Test
- B. Data Cycle Test
- C. Process Cycle Test
- D. Syntactic Test

- A. Incorrect. The Data Combination Test is a versatile technique for testing functionality both at detailed level and at overall system level.
- B. Incorrect. The Data Cycle Test is a technique to test whether the data are being used and processed consistently by various functions from within different subsystems or even different systems.
- C. Incorrect. The Process Cycle Test is a technique mainly used in testing the quality characteristic of Suitability (integration between the administrative organisation and the automated information system).
- D. Correct. The Syntactic Test is suitable for this. (Lit. A § 3.7.4).

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The specifications of a given subsystem contain no pseudo-code or other structured descriptions. They do, however, provide information about the data that plays a role in that subsystem and its influence on the functionality.

Which test design technique is used to test the functionality?

- A. Data Combination Test
- B. Elementary Comparison Test
- C. Data Cycle Test
- D. Process Cycle Test

- A. Correct. The Data Combination Test is used for this. (Lit. A § 3.7.2 and § 4.3.2.8).
- B. Incorrect. This technique actually requires pseudo-code (or something similar).
- C. Incorrect. This technique requires a CRUD-matrix as a test basis.
- D. Incorrect. This technique requires structured information about the desired system behaviour in the form of paths and decision points.

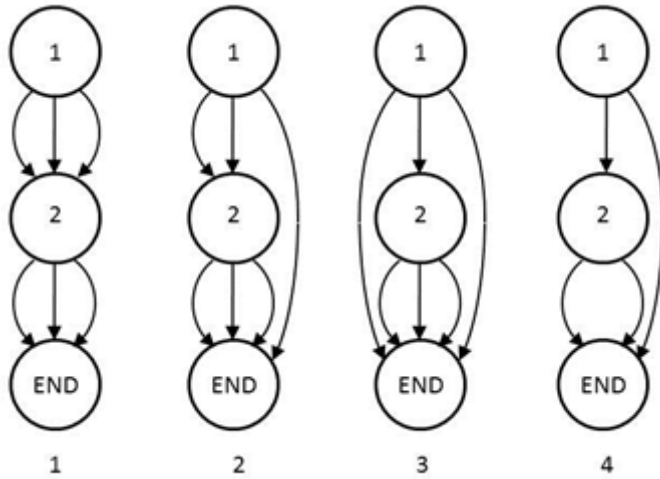
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See the specification and image below:

The Elementary Comparison Test design technique with coverage type decision points with modified condition/decision coverage has been applied on the following specification.

```
IF      A AND B
THEN    C=50
ELSE
        IF    C AND D
        THEN  Error message
        ENDIF
ENDIF
```

Which is the corresponding graph?



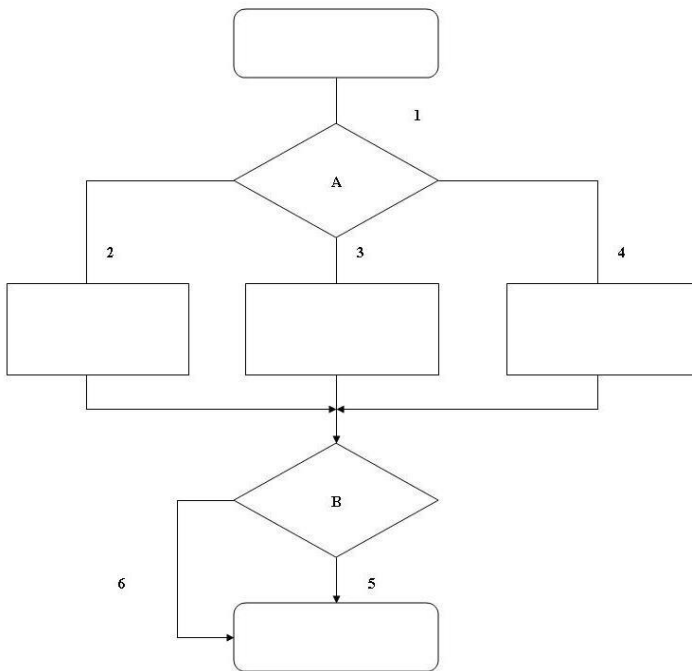
- A. 1
- B. 2
- C. 3
- D. 4

Feedback on the next page

- A. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. In the true-true situation it leads to the “end”. In the true-false and false-true situations it continues to decision point 2. So not all 3 test situations go to decision point 2.
- B. Correct. Both decision points have 2 conditions, each of which leads to 3 test situations. At decision point 1, the true-true situation leads to the “end”. In the true-false and false-true situations it leads to decision point 2. The 3 test situations at decision point 2 (true-false, false-true and true-true) end at the “end”. (Lit. A § 3.4.2.4 and § 3.7.7).
- C. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. The true-true situation leads to the “end”. The true-false and false-true situations continue to decision point 2. So not 2 test situations to the “end”.
- D. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. The true-true situation leads to the “end”. The true-false and false-true situations continue to decision point 2. So not 1 test situation to decision point 2, but 2.

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See the image below:



What is the **minimum** number of logical test cases that is generated using the Process Cycle Test if the coverage type paths test depth level 1 is used?

- A. 2
- B. 3
- C. 5
- D. 6

- A. Incorrect. The three test situations at A cannot be included under the two test situations at B.
- B. Correct. Using three logical test cases all test situations are covered (Lit. A § 3.7.3 and 3.3.2). E.g. TC-1=1-2-6; TC-2=1-3-5; TC-3=1-4-5.
- C. Incorrect. There are two decision points with five paths as output.
- D. Incorrect. This is the number of test situations: 1; 2; 3; 4; 5; 6.

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See the specification below:

```
IF          customer no. > 350 AND article group = 480
            THEN          reduction = 10 %
ENDIF
IF          region code = 6 OR region code = 9
            THEN          invoice type = K
ELSE        invoice type = B
ENDIF
```

What is the **minimum** number of logical test cases required to test all test situations when using the Elementary Comparison Test with coverage type decision points modified condition/decision coverage?

- A. 2
- B. 3
- C. 4
- D. 6

- A. Incorrect. The specification contains two decisions. There are three logical test cases.
- B. Correct. There are 6 test situations: B1) 11, 10 and 01, B2) 10, 01 and 00. There are no combinations that exclude each other, in which case three logical test cases are enough to test 6 test situations. (Lit. A § 3.4.2.4 and § 3.7.7).
- C. Incorrect. The specification contains 4 single conditions. There are three logical test cases.
- D. Incorrect. The specification contains 6 test situations. There are three logical test cases.

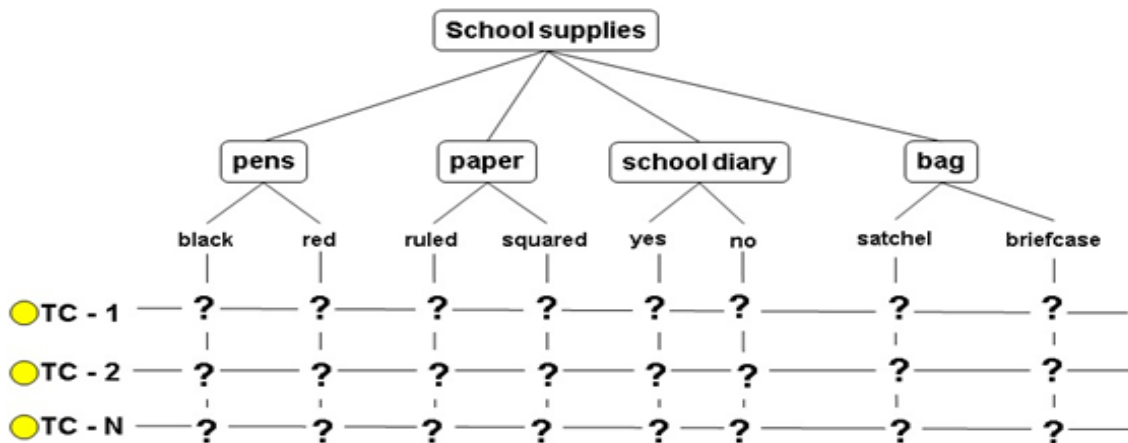
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See image below:

To test the purchase of school items, logical test cases have to be created according to the Data Combination Test. It is agreed that the test should be done with the average thoroughness. This means that pairwise testing should be applied to all parameters:

- pens- paper –school diary– bag)

The test cases are designed using the classification tree below.



What is the **minimum** number of test cases that will be generated when using the Pairwise Testing technique?

- A. 2
- B. 4
- C. 5
- D. 16

Feedback on the next page

- A. Incorrect. The minimum number of combinations is 5. 2 looks like the 'equivalence class coverage type', a variant for condition coverage.
- B. Incorrect. The minimum number of combinations is 5. When working it out, (2x2) may start with 4 combinations, but one detail cannot be accommodated, meaning that 2 extra test cases are required.
- C. Correct. (Lit. A § 3.5.4.1 and 3.7.2).

	Pens	Paper	School diary	Bag
1.	red	ruled	yes	satchel
2.	red	squared	no	briefcase
3.	black	squared	yes	briefcase
4.	black	ruled	no	briefcase
5.	black	squared	no	satchel

- D. Incorrect. The minimum number of combinations is 5. 16 is the answer to the question: What is the maximum number of test cases possible? (=2x2x2x2)

Evaluation

number	answer	points		number	answer	points
1	B	1		16	C	1
2	B	1		17	C	1
3	D	1		18	D	1
4	C	1		19	A	1
5	B	1		20	C	1
6	B	1		21	B	1
7	C	1		22	A	1
8	D	1		23	A	1
9	B	1		24	C	1
10	A	1		25	D	1
11	A	1		26	A	1
12	A	1		27	B	1
13	A	1		28	B	1
14	B	1		29	B	1
15	C	1		30	C	1

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