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**TMap NEXT®**

**Test Engineer**

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Sample Exam

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Edition 201607



**TMap NEXT®**

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# Introduction

This is the sample exam TMap NEXT® 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 of 30

Which test method is also referred to as ad hoc testing?

- A. Structured testing
- B. Unstructured testing
- C. Maintenance testing
- D. Risk-based testing

2 of 30

While executing tests, the testers notice the dramatically bad system performance, despite the fact that no test cases have been designed for this.

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

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

3 of 30

What is testing?

- A. testing is an activity intended to detect errors
- B. testing is a process that provides insight into, and advice on quality and related risks
- C. testing is a process designed to find out whether the correct functionality has been implemented

4 of 30

Which document type **best** conveys the purpose of a master test plan?

- A. Coordination document
- B. Infrastructure document
- C. Planning document
- D. Test design document

**5 of 30**

For a system, an organization wants to test the degree to which the manual procedures interconnect with the automated information system and the workability of these manual procedures for the organization.

To which quality characteristic does this description relate?

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

**6 of 30**

What does the quality attribute '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

**7 of 30**

What constitutes a good test environment?

- A. it is possible to adequately determine to what extent the test object meets the requirements
- B. it has been configured and tested by qualified personnel
- C. it meets both of the requirements listed above
- D. it is as similar to the production environment as possible and the test data is consistent

**8 of 30**

What are the advantages of using test tools?

- A. they perform routine test work, allow stress tests to be executed more effectively and make middleware testing easier
- B. standardization, higher productivity and more economical
- C. they reduce the number of different test functions, perform higher quality testing and increase job satisfaction

**9 of 30**

For which activity are 'test design technique' checklists used?

- A. intake of the test object
- B. creating checklists
- C. creating test specifications
- D. collection of the test basis

**10 of 30**

Evaluating the test process is an activity performed in the Completion phase.

What is the aim of this evaluation?

- A. to assess the test results
- B. to determine which test cases should be preserved
- C. to learn from experience gained during the completed test
- D. to create a release advice

**11 of 30**

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

- A. to prepare the starting point required for the execution of the tests
- B. to establish whether the delivered parts of the test object function in such a way that adequate testing can be carried out
- C. to establish the testability of the test basis
- D. to obtain test results, on the basis of which evaluation of the test object can take place

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In which phase does the test manager prepare the final report?

- A. Completion
- B. Control
- C. Execution

**13 of 30**

The specification of test cases according to a test design technique follows five general steps.

Which step is 'Establishing the starting point'?

- A. step 2
- B. step 3
- C. step 4
- D. step 5

**14 of 30**

What is **not** one of the aims of the 'testability review test basis' report?

- A. providing feedback on the quality of the test basis and its impact on the planned test procedure
- B. gaining an insight into the estimation for the test procedure
- C. obtaining information on project risks
- D. discussing the weak spots in the system design on time

**15 of 30**

There is a choice of three possibilities for the entering of test data in an existing system.

Which possibility has an advantage from a testing perspective?

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

**16 of 30**

Which fields are part of the defect report minimum field set?

- A. severity, submitter and test environment identification
- B. severity, brief characterization and priority
- C. submitter, unique identification and temporary severity

17 of 30

Which system development method is agile and contains structured guidelines for development testing?

- A. DSDM
- B. SDM
- C. XP

18 of 30

How is development testing similar to system testing or acceptance testing?

- A. the person who discovers a defect is usually the person who will resolve it
- B. the risk-related parts must be tested first
- C. reporting must be very detailed

19 of 30

See the specification below:

```
IF      A <= 10 EN B = 12 OF C >= 10
      THEN X := 40
ENDIF
IF      D <= 14
      THEN X := 50
ELSE    X := 0
ENDIF
```

D <= 14 is an example of which concept?

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

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

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

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If a person is younger than 8 years old (<8), aged between 35 and 45 years (>35 and <45) or older than 60 years (>60), then he/she is eligible for a discount.

How many equivalence classes can be distinguished in the example above?

- A. 2
- B. 3
- C. 4
- D. 5

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See the decision below:

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

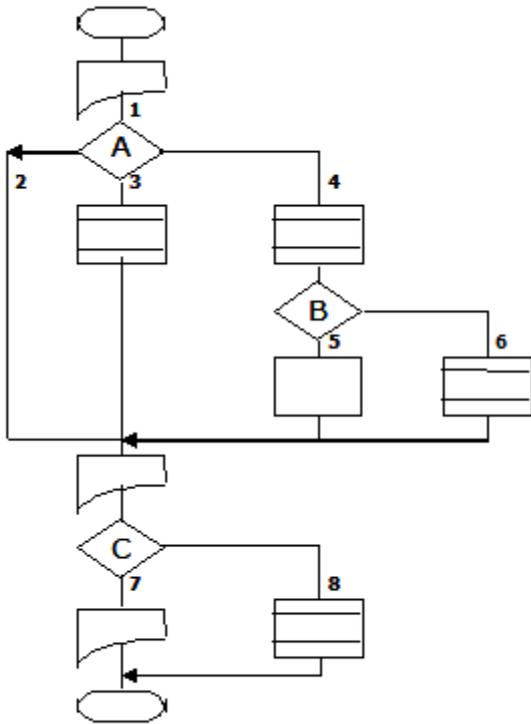
The coverage type decision point is applied to the decision using modified condition/decision coverage.

In which test situation does the value of D determine the outcome of the decision, 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

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See the procedure flow below:



How many test situations are produced when the coverage type paths test depth level 3 is used?

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

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A decision table consists of three conditions.

How many combinations does the complete decision table contain?

- A. 2
- B. 4
- C. 8
- D. 9

**25 of 30**

A test basis consists of rules, which specify how 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 focused on this situation?

- A. data combination test
- B. data cycle test
- C. process cycle test
- D. syntactic test

**26 of 30**

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

Which test design technique should be used to test the functionality?

- A. data combination test
- B. elementary comparison test
- C. data cycle test
- D. process cycle test

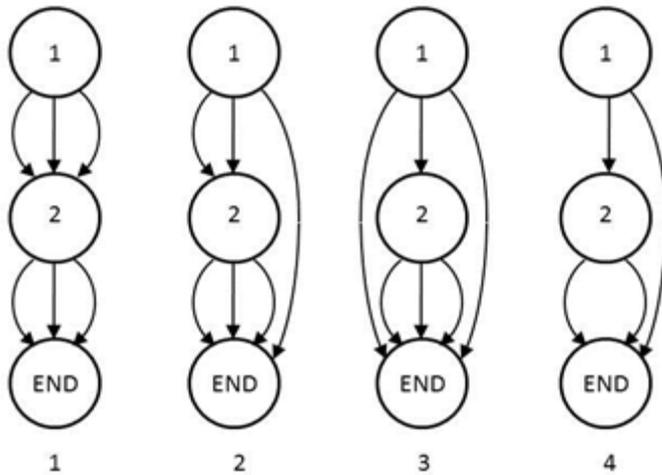
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See the specification and illustration below:

The test design technique Elementary Comparison Test with coverage type decision points with modified condition/decision coverage, has been used on the below specification.

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

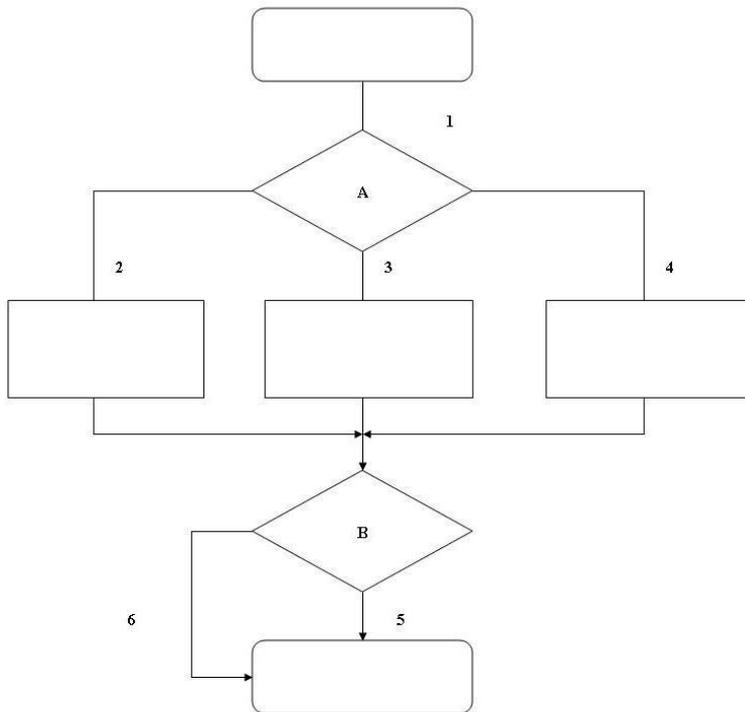
Which is the corresponding graph?



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

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See the illustration 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

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See the specification below:

```
IF      customer no. > 200 AND article group = 330
      THEN discount = 5%
END-IF
IF      region code = 4 OR 8
      THEN invoice type = A
ELSE    invoice type = B
END-IF
```

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

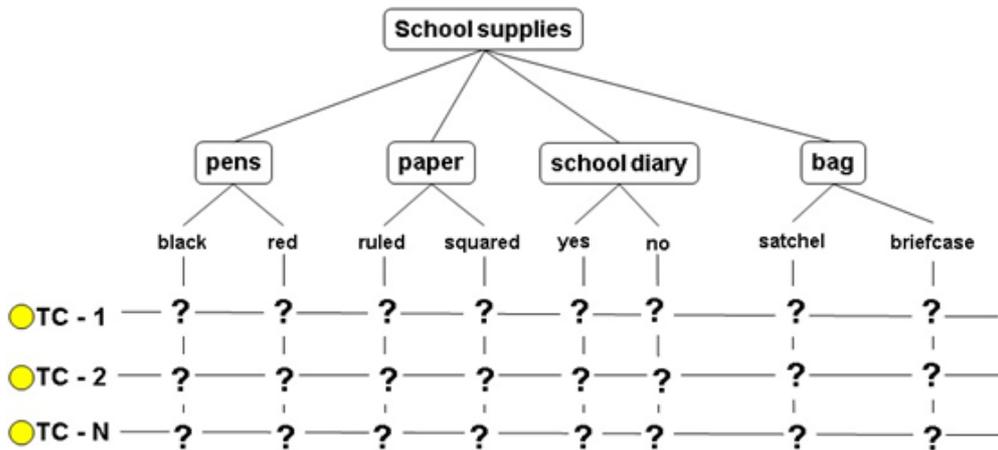
- A. 2
- B. 3
- C. 4
- D. 6

See the classification tree below:

In order to test the purchase of school supplies, logical test cases must be created based on the data combination test. It has been agreed in this instance that a medium depth test is required. This means that all data must be subjected to pairwise testing:

- pens – paper – school diary - bag

The test cases are designed using the below classification tree.



What is the minimum number of test cases that will be generated by applying the pairwise testing technique? (What is “N” at a minimum?)

- A. 2
- B. 4
- C. 6
- D. 16

# Answer key

1 of 30

Which test method is also referred to as ad hoc testing?

- A. Structured testing
- B. Unstructured testing
- C. Maintenance testing
- D. Risk-based testing

A. Incorrect. In a structured testing process, testing is carried out systematically and not ad hoc.  
B. Correct. Unstructured testing is often referred to as ad hoc testing.  
C. Incorrect. Ad hoc testing is unstructured testing and has no quality criteria. It bears no relation to system, acceptance or maintenance testing either.  
D. Incorrect. There is no underlying risk analysis in the case of ad hoc testing and so testing is not risk-based.

2 of 30

While executing tests, the testers notice the dramatically bad system performance, despite the fact that no test cases have been designed for this.

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

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

A. Incorrect. Dynamic explicit testing involves the design of explicit test cases to obtain information about the corresponding characteristic (quality attribute).  
B. Correct. During dynamic testing, information about other quality attributes can be gathered for which explicit test cases have not been designed (dynamic implicit testing) (Section 2.3.2).  
C. Incorrect. Static testing evaluates the end product without running the software.

3 of 30

What is testing?

- A. testing is an activity intended to detect errors
- B. testing is a process that provides insight into, and advice on quality and related risks
- C. testing is a process designed to find out whether the correct functionality has been implemented

- A. Incorrect. Testing is not an activity, it is a process.
- B. Correct. This is the correct definition of testing (Section 2.1)
- C. Incorrect. It is not the primary aim to determine whether the correct functionality has been implemented.

4 of 30

Which document type **best** conveys the purpose of a master test plan?

- A. Coordination document
- B. Infrastructure document
- C. Planning document
- D. Test design document

- A. Correct. The purpose of a master test plan is to draw up and coordinate, in consultation with the client and other stakeholders, a complete overview of what needs to be tested, when and how thoroughly, and the distribution across the various test levels.
- B. Incorrect. Defining the test infrastructure forms part of the master test plan.
- C. Incorrect. A planning phase forms part of the master test plan.
- D. Incorrect. In a master test plan, test cases are not included and it is therefore not a test design document.

**5 of 30**

For a system, an organization wants to test the degree to which the manual procedures interconnect with the automated information system and the workability of these manual procedures for the organization.

To which quality characteristic does this description relate?

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

A. Incorrect. Effectivity relates to the degree to which the information system is tailored to the organization and the profile of the end users for whom it is intended, as well as the degree to which the information system contributes to the achievement of the 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. Functionality is the degree of certainty that the system processes the information accurately and completely, in accordance with the description in the specifications.

D. Correct. This description relates to suitability (Section 10.2 page 495-501).

**6 of 30**

What does the quality attribute '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, an attribute of the continuity quality attribute.

C. Correct. This is the meaning of manageability (Section 10.2).

D. Incorrect. This is part of maintainability.

**7 of 30**

What constitutes a good test environment?

- A. it is possible to adequately determine to what extent the test object meets the requirements
- B. it has been configured and tested by qualified personnel
- C. it meets both of the requirements listed above
- D. it is as similar to the production environment as possible and the test data is consistent

A. Correct. A good test environment is set up in such a way that it is possible to adequately determine to what extent the test object meets the requirements (Section 8.4.3).

B. Incorrect. Configuration of a test environment by qualified personnel is not a guarantee for sufficiently determining whether the test object meets predefined requirements.

C. Incorrect. This does not imply that it is possible to determine sufficiently whether the test object meets predefined requirements

D. Incorrect. The test environment content and structure are dependent on the type of test.

**8 of 30**

What are the advantages of using test tools?

- A. they perform routine test work, allow stress tests to be executed more effectively and make middleware testing easier
- B. standardization, higher productivity and more economical
- C. they reduce the number of different test functions, perform higher quality testing and increase job satisfaction

A. Correct. Test tools perform routine test work, allow stress tests to be executed more effectively and make middleware testing easier (Section 8.5.4).

B. Incorrect. The use of test tools is not necessarily more economical.

C. Incorrect. The use of test tools actually increases the number of different test functions.

**9 of 30**

For which activity are 'test design technique' checklists used?

- A. intake of the test object
- B. creating checklists
- C. creating test specifications
- D. collection of the test basis

A. Incorrect. This activity of the Execution phase uses the 'intake of the test object' checklist.

B. Correct. Creating checklists is an activity of the Preparation phase. The 'test design technique' checklists are used to create a checklist for evaluating the test basis (Section 6.5.2).

C. Incorrect. This activity is part of the Specification phase in which the test design techniques are actually used.

D. Incorrect. This activity of the Preparation phase collects the test basis, which is evaluated in subsequent activities using checklists.

**10 of 30**

Evaluating the test process is an activity performed in the Completion phase.

What is the aim of this evaluation?

- A. to assess the test results
- B. to determine which test cases should be preserved
- C. to learn from experience gained during the completed test
- D. to create a release advice

A. Incorrect. This is an Execution phase activity.

B. Incorrect. This takes place during the preserve testware activity.

C. Correct. Learning from the experiences gained during the completed test and to document the learning points for future tests (Section 6.8.1).

D. Incorrect. This is part of the Control phase (Monitoring activity)

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

- A. to prepare the starting point required for the execution of the tests
- B. to establish whether the delivered parts of the test object function in such a way that adequate testing can be carried out
- C. to establish the testability of the test basis
- D. to obtain test results, on the basis of which evaluation of the test object can take place

- A. Incorrect. This is the aim of preparing the starting point activity.
- 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 (Section 6.7.1).
- C. Incorrect. This is the aim of the test basis evaluation activity in the preparation phase.
- D. Incorrect. This is the aim of the test and retest execution activities.

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In which phase does the test manager prepare the final report?

- A. Completion
- B. Control
- C. Execution

- A. Incorrect. The testing process is evaluated in the Completion phase. This is input for the final report, which is prepared in the Control phase.
- B. Correct. The final report is prepared in the Control phase (Section 6.3.3).
- C. Incorrect. The final report is prepared in the Control phase.

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The specification of test cases according to a test design technique follows five general steps.

Which step is 'Establishing the starting point'?

- A. step 2
- B. step 3
- C. step 4
- D. step 5

- A. Incorrect. Step 2 is 'Creating logical test cases'. Step 4 is 'Establishing the starting point'.
- B. Incorrect. Step 3 is 'Creating physical test cases'. Step 4 is 'Establishing the starting point'.
- C. Correct. Step 4 is 'Establishing the starting point' (Section 6.6.1).
- D. Incorrect. Step 5 is 'Creating the test script'. Step 4 is 'Establishing the starting point'.

**14 of 30**

What is **not** one of the aims of the 'testability review test basis' report?

- A. providing feedback on the quality of the test basis and its impact on the planned test procedure
- B. gaining an insight into the estimation for the test procedure
- C. obtaining information on project risks
- D. discussing the weak spots in the system design on time

- A. Incorrect. Providing feedback on the quality of the test basis and its impact on the planned test procedure is indeed one of the aims of the testability review test basis report.
- B. Correct. Gaining an insight into the estimate for the test process is not one of the aims of the testability review test basis report, but one of the master test plan preparation activities (Section 6.5.4).
- C. Incorrect. Obtaining information on project risks is indeed one of the aims of the testability review test basis report.
- D. Incorrect. Discussing the weak spots in the system design up timely is indeed one of the aims of the testability review test basis report.

**15 of 30**

There is a choice of three possibilities for the entering of test data in an existing system.

Which possibility has an advantage from a testing perspective?

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

A. Incorrect. Entering the data with regular system functions has by far the most advantages and the fewest disadvantages from a testing perspective. The use of production data can involve a lot of searching to find the right variation in starting situation.

B. Incorrect. Entering the data with regular system functions has by far the most advantages and the fewest disadvantages from a testing perspective. Entering through separate front-end software increases the probability of inconsistencies.

C. Correct. Entering the data through regular system functions has by far the most advantages and the fewest disadvantages from a testing perspective (Section 6.6.2).

**16 of 30**

Which fields are part of the defect report minimum field set?

- A. severity, submitter and test environment identification
- B. severity, brief characterization and priority
- C. submitter, unique identification and temporary severity

A. Incorrect. Test environment identification is not part of the defect report minimum field set

B. Correct. Severity, brief characterization and priority are part of the defect report minimum field set (Section 12.3).

C. Incorrect. Temporary severity is not part of the defect report minimum field set.

**17 of 30**

Which system development method is agile and contains structured guidelines for development testing?

- A. DSDM
- B. SDM
- C. XP

A. Incorrect. DSDM is an iterative development method and contains no guidelines for development testing.

B. Incorrect. SDM is a waterfall development method and contains no guidelines for development testing.

C. Correct. XP is an agile development method and describes the relevant practices for development testing: Pair Programming, Test-driven Development and Continuous Integration (Section 7.2.4).

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How is development testing similar to system testing or acceptance testing?

- A. the person who discovers a defect is usually the person who will resolve it
- B. the risk-related parts must be tested first
- C. reporting must be very detailed

A. Incorrect. Testing and resolving is carried out by the same person during development testing, but this is not the case for system and acceptance testing.

B. Correct. For each test, the basic assumption is that the most risk-related parts must be tested first (Section 7.2.6).

C. Incorrect. During development testing, reporting may be less detailed than during system or acceptance testing.

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See the specification below:

```
IF      A <= 10 EN B = 12 OF C >= 10
      THEN X := 40
ENDIF
IF      D <= 14
      THEN X := 50
ELSE    X := 0
ENDIF
```

D <= 14 is an example of which concept?

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

A. Incorrect. An action comprises all of the activities that must be executed to activate the system to the processing.  
B. Correct. D <= 14 is an example of a condition. (Section 14.2.1)  
C. Incorrect. AND is an example of an operator in the specification.  
D. Incorrect. A test situation is an isolated condition in which the test object displays a specific behavior that needs to be tested.

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

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

A. Correct. Every logical test case is worked out concretely into one physical test case (Section 14.2.1).  
B. Incorrect. Every logical test case is worked out concretely into one physical test case.  
C. Incorrect. Every logical test case is worked out concretely into one physical test case.  
D. Incorrect. Every logical test case is worked out concretely into one physical test case.

21 of 30

If a person is younger than 8 years old ( $<8$ ), aged between 35 and 45 years ( $>35$  and  $<45$ ) or older than 60 years ( $>60$ ), then he/she is eligible for a discount.

How many equivalence classes can be distinguished in the example above?

- A. 2
- B. 3
- C. 4
- D. 5

- A. Incorrect. The equivalence classes that are distinguished are: ( $\text{age} < 8$ ), ( $8 \leq \text{age} \leq 35$ ), ( $35 < \text{age} < 45$ ), ( $45 \leq \text{age} \leq 60$ ) and ( $\text{age} > 60$ ).
- B. Incorrect. The equivalence classes that are distinguished are: ( $\text{age} < 8$ ), ( $8 \leq \text{age} \leq 35$ ), ( $35 < \text{age} < 45$ ), ( $45 \leq \text{age} \leq 60$ ) and ( $\text{age} > 60$ ).
- C. Incorrect. The equivalence classes that are distinguished are: ( $\text{age} < 8$ ), ( $8 \leq \text{age} \leq 35$ ), ( $35 < \text{age} < 45$ ), ( $45 \leq \text{age} \leq 60$ ) and ( $\text{age} > 60$ ).
- D. Correct. The equivalence classes that are distinguished are: ( $\text{age} < 8$ ), ( $8 \leq \text{age} \leq 35$ ), ( $35 < \text{age} < 45$ ), ( $45 \leq \text{age} \leq 60$ ) and ( $\text{age} > 60$ ). (Section 14.3.4)

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See the decision below:

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

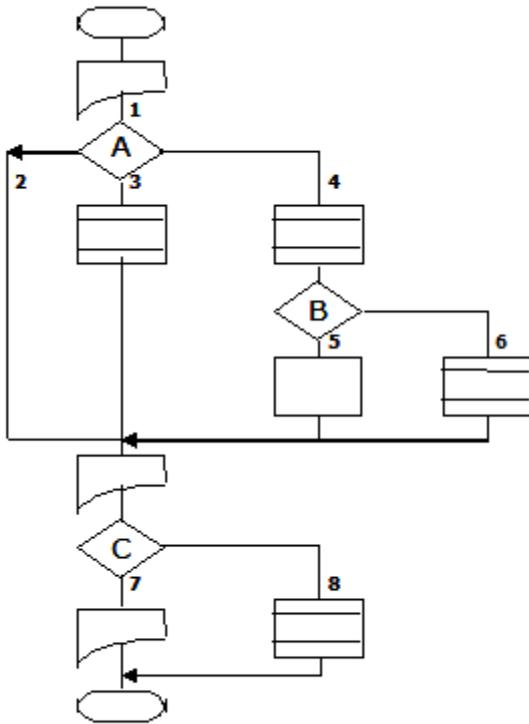
The coverage type decision point is applied to the decision using modified condition/decision coverage.

In which test situation does the value of D determine the outcome of the decision, 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 becomes FALSE. (Section 14.3.3)
- B. Incorrect. The result remains FALSE (due to A) if D becomes FALSE.
- C. Incorrect. The result remains FALSE (due to B and C) if D becomes FALSE.
- D. Incorrect. The result remains FALSE (due to A, B and C) if D becomes FALSE.

See the procedure flow below:



How many test situations are produced when 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 test depth level 1 is used. There are 10 test situations.  
 C. Correct. There are 10 test situations: 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 (Section 14.3.2 page 598).  
 D. Incorrect. That is the result when test depth level 2 is used. There are 10 test situations.

**24 of 30**

A decision table consists of three conditions.

How many combinations does the complete decision table contain?

- A. 2
- B. 4
- C. 8
- D. 9

- A. Incorrect. This can be a result of condition coverage.
- B. Incorrect. This can be a result of modified condition/decision coverage.
- C. Correct. The number of columns is  $2^n$ , where  $n$  is the number of conditions. (Section 14.3.3)
- D. Incorrect. The number of columns is not  $n^2$ , where  $n$  is the number of conditions.

**25 of 30**

A test basis consists of rules, which specify how 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 focused on this 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 the testing of functionality both at detail level and at overall system level.
- B. Incorrect. The data cycle test is a technique for testing 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 that is applied in particular of the testing of the quality characteristic of Suitability (integration between the administrative organization and the automated information system).
- D. Correct. The syntactic design is suitable for this purpose. (Section 14.4.11)

26 of 30

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

Which test design technique should be 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 purpose. (Section 14.4.3)
- B. Incorrect. This technique actually requires pseudo-code or something comparable.
- C. Incorrect. This technique requires a CRUD matrix as a test basis.
- D. Incorrect. This technique requires structured information about the required system behavior in the form of paths and decision points.

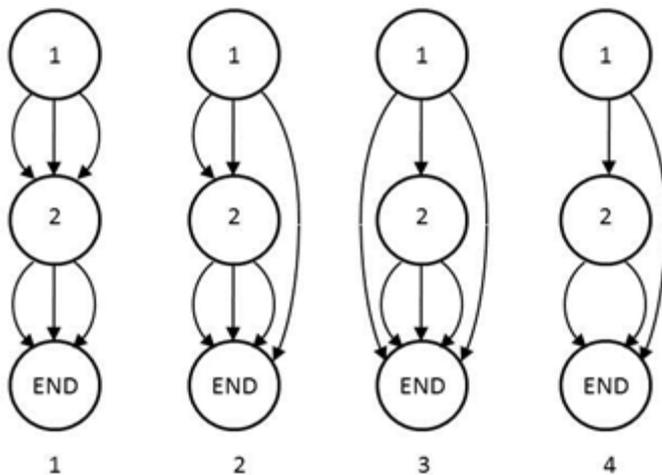
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See the specification and illustration below:

The test design technique Elementary Comparison Test with coverage type decision points with modified condition/decision coverage, has been used on the below 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

A. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. In the true-true situation, the user proceeds to the “end”. In the true-false and false-true situations, the user proceeds to decision point 2. Therefore, not all 3 situations lead to decision point 2.

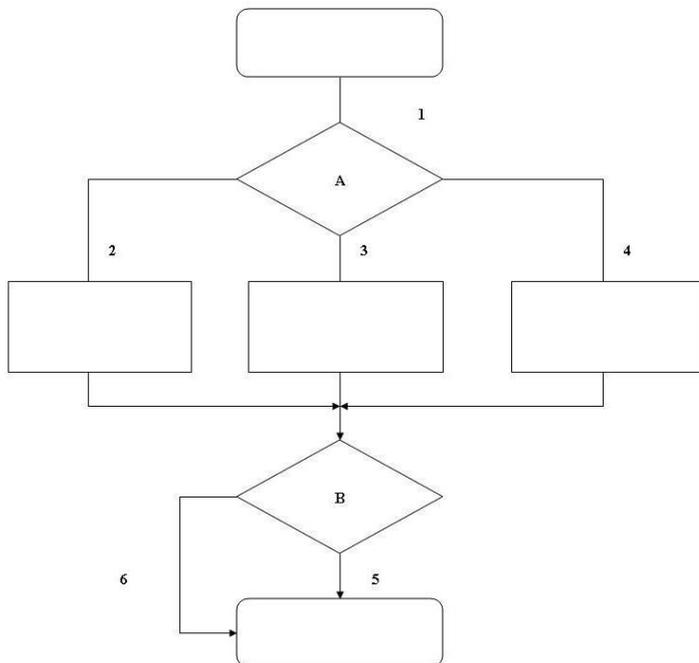
B. Correct. Both decision points have 2 conditions, which each lead to 3 test situations. In the true-true situation at decision point 1, the user proceeds to the “end”. In the true-false and false-true situations, the user proceeds to decision point 2. The 3 test situations at decision point 2 (true-false, false-true and true-true) end at “end”.

C. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. In the true-true situation, the user proceeds to the “end”. In the true-false and false-true situations, the user proceeds to decision point 2. Therefore, there are not 2 situations which lead to the “end”.

D. Incorrect. Decision point 1 has 2 conditions, which lead to 3 test situations. In the true-true situation, the user proceeds to the “end”. In the true-false and false-true situations, the user proceeds to decision point 2. Therefore, 1 situation does not lead to decision point 2, but 2.

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See the illustration 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.

For example, TC-1=1-2-6; TC-2=1-3-5; TC-3=1-4-5 (Section 14.3.2).

C. Incorrect. There are two decision points with five exit paths.

D. Incorrect. The number of test situations are 1; 2; 3; 4; 5; 6.

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See the specification below:

```
IF      customer no. > 200 AND article group = 330
      THEN discount = 5%
ENDIF
IF      region code = 4 OR 8
      THEN invoice type = A
ELSE    invoice type = B
ENDIF
```

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

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

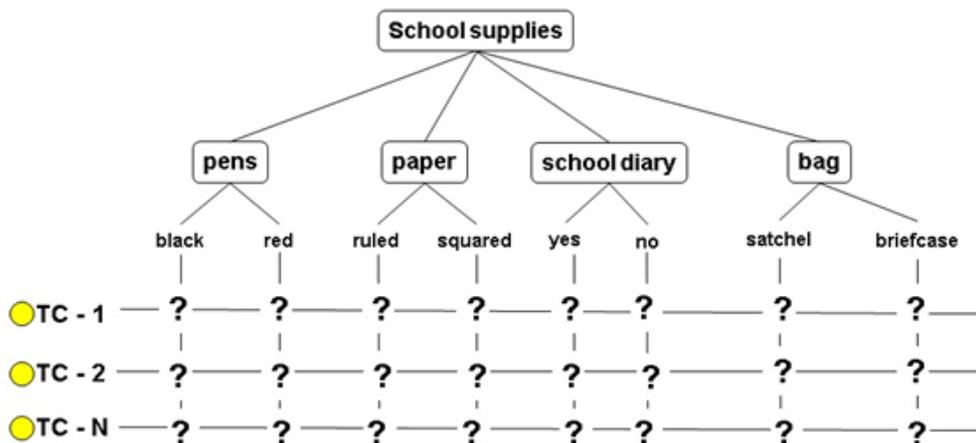
A. Incorrect. The specification includes 2 decisions. There are 3 logical test cases.  
B. Correct. There are 6 test situations: B1) 11, 10 and 01, B2) 10, 01 en 00. There are no combinations that rule out one another, so the 3 logical test cases are sufficient for testing the 6 test situations. (§ 14.4.4, page 654, 655)  
C. Incorrect. The specification include 4 simple conditions. There are 3 logical test cases.  
D. Incorrect. The specification include 6 test situations. There are 3 logical test cases.

**See the classification tree below:**

In order to test the purchase of school supplies, logical test cases must be created based on the data combination test. It has been agreed in this instance that a medium depth test is required. This means that all data must be subjected to pairwise testing:

- pens – paper – school diary - bag

The test cases are designed using the below classification tree.

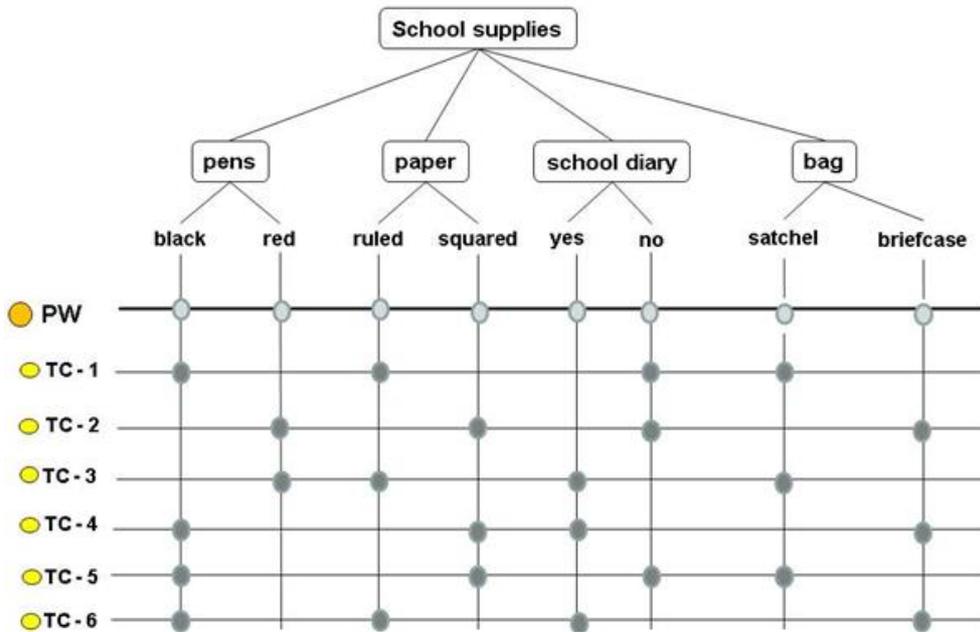


What is the minimum number of test cases that will be generated by applying the pairwise testing technique? (What is “N” at a minimum?)

- A. 2
- B. 4
- C. 6
- D. 16

A. Incorrect. The minimum number of combinations is 6. 2 resembles ‘equivalence class coverage’, a type of variant of condition coverage.  
 B. Incorrect. The minimum number of combinations is 6. Indeed, when calculating the answer, you start with (2x2) 4 combinations. However, one of the items of data cannot be grouped under these, as a result of which 2 additional test cases are needed.

C. Correct. Section 14.4.3.



D. Incorrect. The minimum number of combinations is 6. 16 is the answer to the question: What is the maximum possible number of test cases (2x2x2x2)?

# Evaluation

number	answer	points
1	B	1
2	B	1
3	B	1
4	A	1
5	D	1
6	C	1
7	A	1
8	A	1
9	B	1
10	C	1
11	B	1
12	B	1
13	C	1
14	B	1
15	C	1

number	answer	points
16	B	1
17	C	1
18	B	1
19	B	1
20	A	1
21	D	1
22	A	1
23	C	1
24	C	1
25	D	1
26	A	1
27	B	1
28	B	1
29	B	1
30	C	1



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