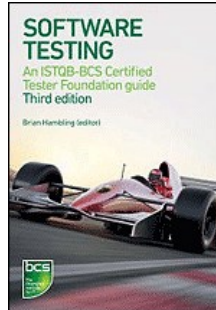


Chapters *To Go*



Software Testing: An ISTQB-BCS Certified Tester Foundation Guide, Third Edition

by Brian Hambling
BCS. (c) 2015. Copying Prohibited.

Reprinted for Geetha Karthikesan, Training

none@books24x7.com

Reprinted with permission as a subscription benefit of **Skillport**,

All rights reserved. Reproduction and/or distribution in whole or in part in electronic, paper or other forms without written permission is prohibited.



Appendix A1: Mock CTFL Examination

Question 1

?

Which of the following is a valid objective of testing?

- a. Locating defects in the code.
- b. Preventing defects.
- c. Ensuring no defects are present.
- d. Correcting defects.

Question 2

?

Which of the following are *most* important in determining the quality of test cases?

- i. Referencing the current version of the requirements.
 - ii. Traceability to requirements via test conditions.
 - iii. Incorporating well-defined expected results.
 - iv. Referencing the test procedure and test execution schedule.
 - v. Identifying the author of the test case.
- a. i and ii.
 - b. ii and iii.
 - c. iii and iv.
 - d. ii and v.

Question 3

?

Which of the following is true of both linear and cyclical development models for software development?

- a. They both require system requirements to be defined fully upfront.
- b. They both require that working versions of the system are produced early.
- c. They both require that each development activity is matched by a testing activity.
- d. They both require four levels of testing.

Question 4

?

Candidates for a software developer role must be at least 18 years of age, achieve a pass (at least 60 per cent) in the relevant certification examination and demonstrate at least two years of experience as a developer. Candidates may be declined, accepted as a trainee (if their experience is not yet adequate) or accepted. How many valid input equivalence partitions would be needed to test the acceptance of candidates?

- a. 3
- b. 4
- c. 5
- d. 6

Question 5

?

What is the main benefit of use case testing?

- a. Use case tests correspond to business rules and check the outputs for multiple input conditions.
- b. Use test cases always contain alternative scenarios to test what happens when a component fails.
- c. Use cases are good for defining user acceptance tests with user participation.

- d. Use case tests can be used to achieve input and output coverage goals.

Question 6

?

You have been asked to generate a defect report for a test failure in a ticket booking system that maintains a small database containing details of bookings made. You have collected together what you believe is the necessary information, as follows:

- Reference of the test script that failed.
- Expected and actual results.
- Description of the incident.
- Date of the report.
- Your name.
- System under test.
- Identification of the item under test.

Which of the following fields would be *most* important to add to the incident report to provide adequate detail for the developer tasked with investigating the incident report?

- i. Test level at which the incident was raised.
 - ii. Log of the session during which the test failure occurred.
 - iii. Database dump.
 - iv. Test tools used.
 - v. Proposed priority.
- a. i, ii and iii.
 - b. ii, iii and v.
 - c. i, iii and iv.
 - d. ii, iv and v.

Question 7

?

Which *two* of the following statements *best* describe the difference between testing and debugging?

- i. Testing aims to identify defects.
 - ii. Testing aims to identify failures caused by defects.
 - iii. Testing aims to assess the quality of the software.
 - iv. Debugging aims to find and remove defects.
 - v. Debugging aims to find, analyse and remove the causes of failures.
- a. i and iv.
 - b. ii and iv.
 - c. iii and v.
 - d. i and v.

Question 8

?

In the following state transition diagram, if the system is initially in the neutral state, what would be the expected value for a test case with the following sequence of inputs: D, +, +, N, -?

- a. 3
- b. neutral
- c. 1

d. 4

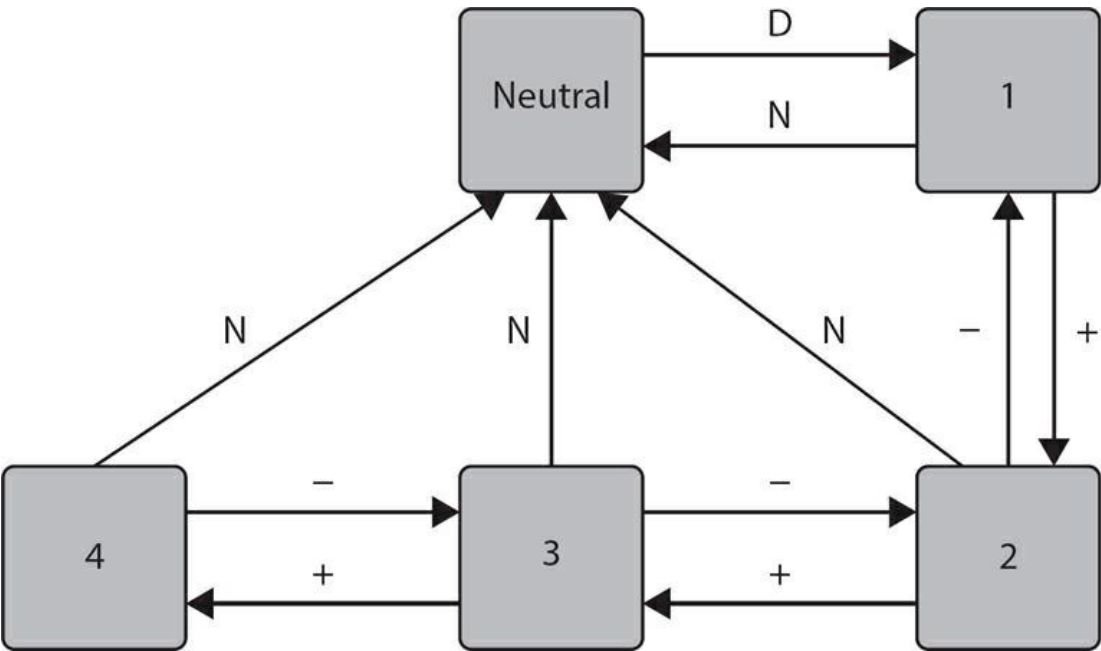


Figure A1.1: State transition diagram for question 8

Question 9

?

In the following state transition diagram and table how many non-valid transitions are there?

- a. 7
- b. 8
- c. 9
- d. 10

Table A1.1: State transition table for question 9

State/Event	Neutral	1	2	3	4
D	1	X	X	X	X
N	X	Neutral	Neutral	Neutral	Neutral
+	X	2	3	4	X
-	X	X	1	2	3

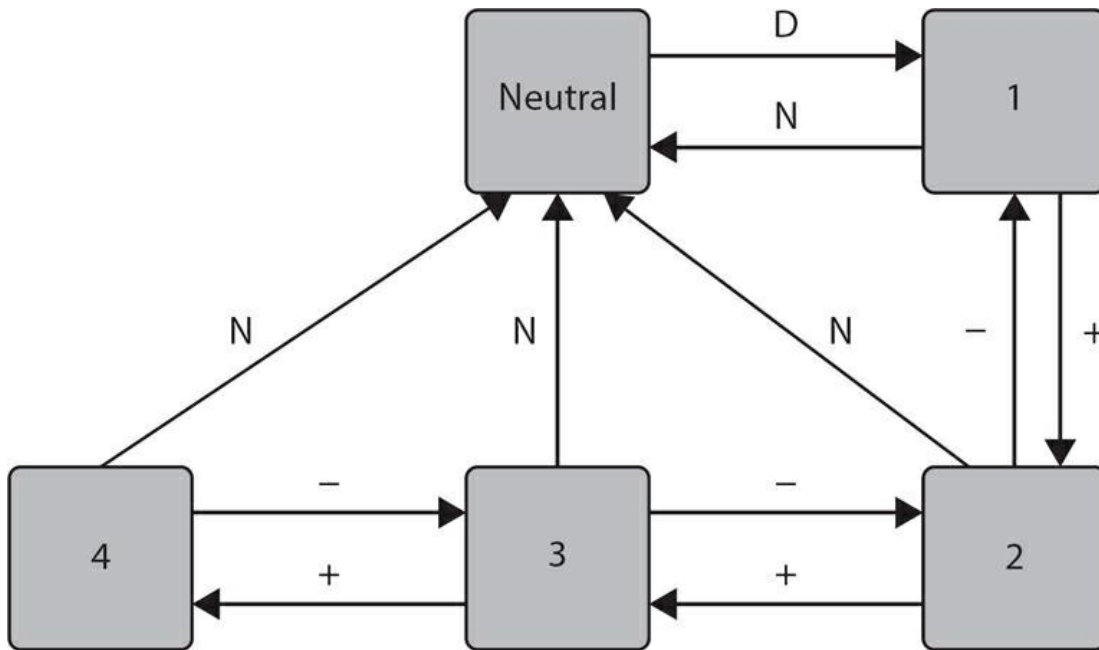


Figure A1.2: State transition diagram for question 9

Question 10

Why are both specification-based and structure-based test design techniques needed?

- a. Because specification-based techniques do not provide coverage measures.
- b. Because structure-based techniques can only test code.
- c. Because both are needed to improve the chances of finding defects.
- d. Because neither can take advantage of users' and testers' experience of the type of system being tested.

Question 11

Which of the following would be the most suitable test basis for system testing when following the V-model?

- a. A program specification.
- b. A detailed design document.
- c. A copy of the coding standards.
- d. A functional specification.

Question 12

An airline frequent flyer scheme provides rewards based on the mileage flown. Every route or leg of a route attracts loyalty points based on the mileage associated with that route, which is calculated to the nearest 10 miles. Mileage is added to a frequent flyer's account within 10 days of a completed flight. Frequent flyers can hold accounts at the 'blue', 'silver' or 'gold' level. Rewards include ticket upgrades, free tickets and promotion from one colour of card to a higher one. A ticket upgrade requires a minimum of 1000 miles, a free ticket requires 10,000 miles and card upgrades are automatically triggered when the holder has completed 100,000 miles since the previous upgrade.

Which of the following would be suitable for boundary value tests on this system?

- a. 990, 1000, 9990, 10,000, 99,990, 100,000
- b. 999, 1000, 9999, 10,000, 99,999, 100,000
- c. 999, 1001, 9999, 10,001, 99,999, 100,001
- d. 900, 1000, 9900, 10,000, 99,900, 100,000

Question 13

How does software testing contribute to the quality of delivered software?

- a. By detecting and removing all the defects in the delivered code and ensuring that all tests adhere to the quality standards set for

the project.

- b. By measuring reliability of the software and ensuring that it is always above 99.99 per cent.
- c. By detecting all deviations from coding good practice and ensuring that these are corrected.
- d. By identifying root causes of defects from past projects and using lessons learnt to improve processes and thus help to reduce the defect count.

Question 14

?

Which of the listed roles matches the listed activities?

- a. Moderator.
 - b. Scribe.
 - c. Reviewer.
 - d. Manager.
-
- A. Sets timescales for individual preparation.
 - B. Allows time for reviews in project schedule.
 - C. Ensures that actions are noted.
 - D. Notes defects as part of individual preparation.
-
- a. 1–A; 2–B; 3–C; 4–D
 - b. 1–A; 2–C; 3–D; 4–B
 - c. 1–B; 2–C; 3–D; 4–A
 - d. 1–B; 2–C; 3–A; 4–D

Question 15

?

Which of the following are benefits provided by configuration management to testing?

- i. The integrity of work-products can be maintained.
 - ii. All testware items are uniquely identified.
 - iii. Defect reports are raised.
 - iv. Defect fixes are matched to code versions.
 - v. The test plan is signed off.
-
- a. i, iii and v.
 - b. i, ii and iv.
 - c. iii, iv and v.
 - d. i, ii and iii.

Question 16

?

Which of the following test case design techniques is structure-based?

- a. State transition testing.
- b. Decision table testing.
- c. Boundary value analysis.
- d. Decision testing.

Question 17

?

Which of the following is a type a defect easier to find in a review than in a dynamic test?

- a. The price of a product incorrectly displayed.
- b. A system which is running too slowly.
- c. A hacker gaining access to customer details.
- d. Code which does not meet the required coding standards.

Question 18

?

Consider the control flow below.

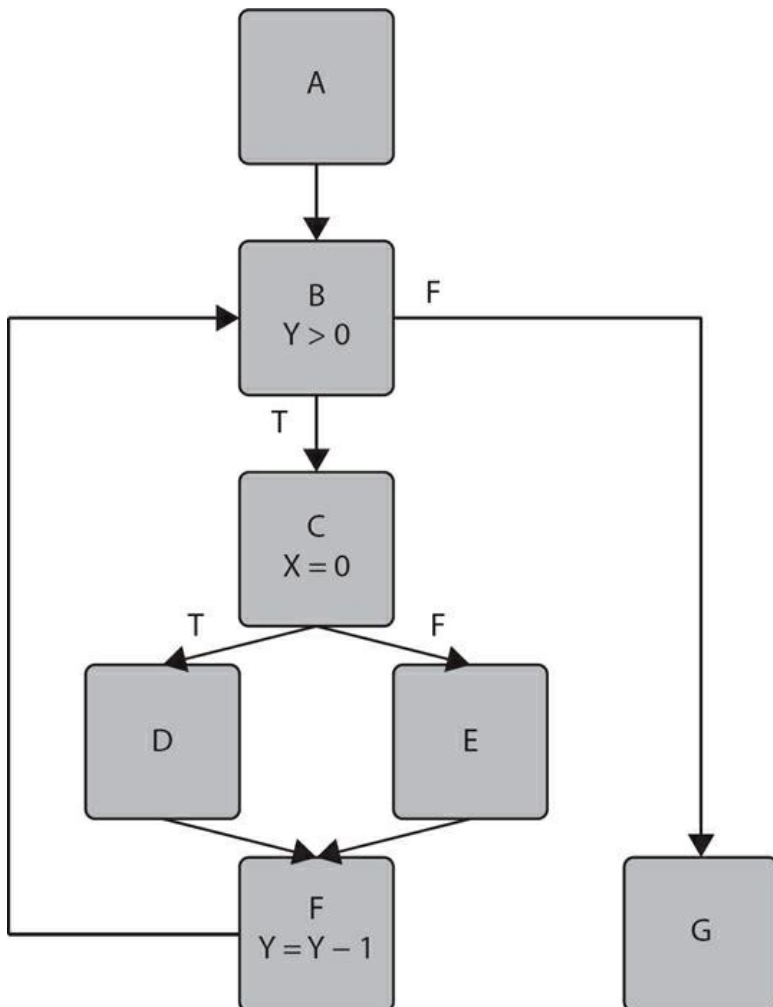


Figure A1.3: Control flow diagram for question 18

Which of the following sets of test cases would achieve 100 per cent decision coverage?

- a. $X = 0, Y = 1; X = 1, Y = 1$
- b. $X = 1, Y = 0; X = 2, Y = 1$
- c. $X = 1, Y = 1; X = 2, Y = 1$
- d. $X = 0, Y = 0; X = 1, Y = 1$

Question 19

?

Consider the following flow graph.

One of the goals for the project is to achieve 100 per cent statement coverage and 100 per cent decision coverage. The following three tests have been executed:

- Test A covers path ABCEFGI.
- Test B covers path ABCEBDEFGI.
- Test C covers path ABDEFHI.

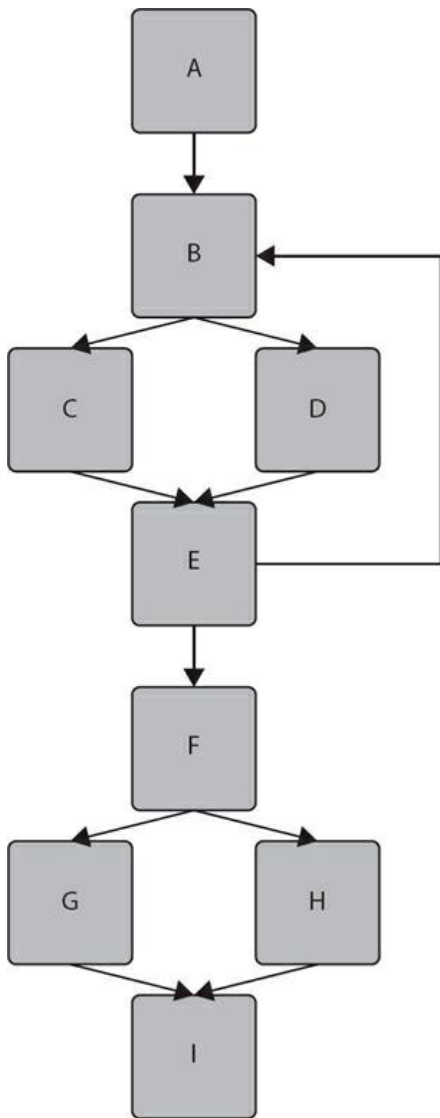


Figure A1.4: Flow graph for question 19

Which of the following statements related to the coverage goal is correct?

- a. The statement testing coverage goal has been achieved, but not the decision coverage goal
- b. Neither the statement testing coverage goal nor the decision coverage goal has been achieved.
- c. Both the statement testing coverage goal and the decision coverage goal have been achieved.
- d. The statement testing coverage goal has not been achieved, but the decision coverage goal has been achieved.

Question 20

?

Which of the following statements correctly describes the defect clustering testing principle?

- a. Testing should be targeted at the most junior developer's code. This is where most defects will occur.
- b. If no defects are found in the first 25 per cent of the time available, the code can be deemed safe to deliver to production.
- c. Testing effort is to be targeted at what is thought to be the riskiest areas, and later those areas where there are more defects found.
- d. Finding and fixing defects does not help if the system built is unstable and does not match user needs/expectations.

Question 21

?

Which of the following statements are true?

- i. Functional testing includes specification-based testing.

- ii. The purpose of structural testing is to test non-functional requirements.
 - iii. Both functional and structural testing can be carried out at all test levels.
 - iv. Functional testing is the same as regression testing.
- a. i and ii.
 - b. ii and iii.
 - c. i and iv.
 - d. i and iii.

Question 22

?

Which of the following provides the best match of activity to resulting document?

- 1. To prepare test cases.
 - 2. To determine the order in which test cases should be run.
 - 3. To determine the time required to execute tests.
 - 4. To highlight outstanding high priority defects.
- A. Test plan.
 - B. Test design specification.
 - C. Test procedure specification.
 - D. Test summary report.
- a. 1–A, 2–B, 3–C, 4–D
 - b. 1–B, 2–C, 3–A, 4–D
 - c. 1–C, 2–B, 3–D, 4–A
 - d. 1–B, 2–A, 3–C, 4–D

Question 23

?

Which of the following are benefits of static analysis?

- i. Improved maintainability of code.
 - ii. Identification of highly complex code.
 - iii. Finding defects by executing code.
 - iv. Finding defects before test execution.
 - v. Better system design documentation.
- a. i, iii and iv.
 - b. ii, iii and v.
 - c. i, ii and v.
 - d. i, ii and iv.

Question 24

?

Why is it important to have test case design techniques based on the tester's experience?

- a. Because experience-based techniques are more effective than specification-based techniques at finding functional defects.
- b. Because experience-based techniques are more effective than structure-based techniques at finding defects in code.
- c. Because experience-based techniques can be used when no specifications are available or when specifications are not detailed enough.

- d. Because users with knowledge of the system under tests are always better at finding defects than testers with no experience of the system under test.

Question 25

?

Which of the following matches the activity to its most suitable type of tool?

1. Managing test assets.
 2. Analysis of code structure.
 3. Simulating the interface of a component.
 4. Generation of test cases.
- A. Test design tool.
 - B. Test harness.
 - C. Configuration management.
 - D. Static analysis tool.
- a. 1–D, 2–B, 3–C, 4–A
 - b. 1–C, 2–A, 3–D, 4–B
 - c. 1–C, 2–D, 3–B, 4–A
 - d. 1–A, 2–C, 3–D, 4–B

Question 26

?

Which of the following test tools are mainly used by developers?

- a. Monitoring tools.
- b. Dynamic analysis tools.
- c. Review tools.
- d. Incident management tools.

Question 27

?

Which of the following is a scripting technique used with test execution tools?

- a. Using a unit test framework.
- b. Use of data-driven tests.
- c. Validation of object modules.
- d. Use of a test oracle.

Question 28

?

Which of the following gives the *most* independence in testing?

- a. Test designed by a fellow member of the design team.
- b. Tests designed by a different organisation.
- c. Tests designed by a different group within the organisation.
- d. Tests designed by the code author.

Question 29

?

Consider the following:

- A test project is underway.
- There are five high priority test cases (TC1–TC5) and two test environments (TE1 and TE2).

- TC1, TC3 and TC5 require use of TE1.
- TC2 and TC4 require use of TE2.
- TC1 requires TC2 to be run first.
- TC2 must be run after TC4.
- TC3 must be run after TC5.
- Testing will take place over two days.
 - TE2 will be ready on day 1 and TE1 on day 2.

Which of the following accurately reflects the order in which tests should be run over the two days?

- a. TC4, TC2, TC1, TC5, TC3
- b. TC2, TC4, TC1, TC5, TC3
- c. TC4, TC2, TC1, TC3, TC5
- d. TC1, TC3, TC5, TC2, TC4

Question 30

?

Which of the following is the *best* description of maintenance testing?

- a. It is a form of non-functional testing and focuses on maintainability of the code.
- b. It is carried out on an operational system after changes have been made.
- c. It is a form of regression testing and checks the impact of code changes.
- d. It uses impact analysis to decide how much regression to do at acceptance testing after a fix has been implemented.

Question 31

?

Which of the following correctly identifies a reason for writing test cases based on knowledge about common defects?

- a. Testers can use their knowledge of how the system is specified to construct systematic test cases.
- b. Users can make use of their experience of using other software to help them decide how the software should work.
- c. Testers can anticipate where defects are most likely to be found and direct tests at those areas.
- d. Users can create specification-based tests from their knowledge of how the software performs.

Question 32

?

Which of the following is a product risk?

- a. The product may not be ready on time.
- b. A calculation may not be performed correctly.
- c. The team may not be properly trained.
- d. The agreed contract may increase our costs.

Question 33

?

Which of the following statements *best* describes the role of testing?

- a. Testing ensures that the right version of code is delivered.
- b. Testing can be used to assess quality.
- c. Testing improves quality in itself.
- d. Testing shows that the software is error free.

Question 34

?

Which of the following would improve how a tool is deployed within an organisation?

- i. Ensure the test process is not changed as a result of the tool's implementation.
 - ii. Define best practice guidelines for users.
 - iii. Roll out the tool across the organisation as quickly as possible to all users.
 - iv. Introduce a system to monitor tool usage and user feedback.
 - v. Provide technical support to the test team for each type of tool.
- a. i, ii and iv.
 - b. i, iii and v.
 - c. ii, iv and v.
 - d. iii, iv and v.

Question 35

?

Which of the following are potential drawbacks of independent testing?

- i. Testers can offer an unbiased view.
 - ii. Testers may become isolated from development.
 - iii. Testing processes may be seen as bottlenecks.
 - iv. Developers may assume less responsibility for software quality.
 - v. Testers may be able to verify assumptions made.
- a. ii, iii and iv.
 - b. i, ii and v.
 - c. ii, iv and v.
 - d. i, iii and iv.

Question 36

?

Which of the following would be best carried out as part of operational acceptance testing?

- a. Testing that the business considers the system fit for purpose.
- b. Testing that the system meets the required regulatory standards.
- c. Testing that potential customers would buy the system.
- d. Testing that system can be recovered after a disaster.

Question 37

?

Which of the following best describes metrics-based and expert-based approaches to test estimation?

- a. Metrics-based estimation requires test points to be counted; expert-based uses the judgement of the tester.
- b. Metrics-based estimation requires use of data from previous similar projects; expert-based uses the judgement of the senior developer.
- c. Metrics-based estimation requires use of a work-breakdown structure; expert-based uses the judgement of the tester.
- d. Metrics-based estimation requires use of data from previous similar projects; expert-based uses the judgement of the tester.

Question 38

?

Which of the following statement pairs correctly describes testing and debugging?

- a. Testing is the process of fixing defects; debugging is undertaken by developers.
- b. Debugging identifies and fixes the cause of failures; testing identifies failures.
- c. Formal testing is usually undertaken by the development team; debugging is performed before any testing has taken place.

- d. Testing aims to assess the quality of the software; debugging assesses whether fixes have been correctly applied.

Question 39

?

Which of the following is a characteristic of good testing in any life cycle model?

- a. Testers should be involved in reviewing relevant documents early.
- b. Testing should begin when the requirements have been captured fully.
- c. When buying a commercial-off-the-shelf product, all levels of testing must always be carried out by the buyer.
- d. Test analysis and design should be carried out once the system has been built.

Question 40

?

Which of the following would be a suitable metric for monitoring test execution?

- a. Percentage of planned test cases prepared.
- b. Percentage of work done in test environment preparation.
- c. Percentage of tests cases passed.
- d. Test coverage of requirements.

Answers

b
b
c
a
c
b
d
b
c
c
d
a
d
b
b
d
d
a
c
c
d
b
d
c
c
b
b
b
a
b
c
b
b
c
a
d
d

b
a
c