
# Question Bank

# Chapter 1
# Fundamentals of Testing
# 7 Questions in the Exam
# 23 Questions

# Sample Questions

- Enough testing has been performed when:

  a) Time runs out
  b) The required level of confidence has been achieved
  c) No more faults are found
  d) The users won't find any serious faults

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# Sample Questions

- Deciding how much testing is enough should take into accout:-

  - i. Level of risk including technical and business product and project risk
  - ii. Project constraints such as time and budget
  - iii. Size of testing team
  - iv. Size of development team

a) i,ii,iii are true and iv is false
b) i,,iv are true and ii is false
c) i,ii are true and iii,iv are false
d) ii,iii,iv are true and i is false

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# Sample Questions

- According to the ISTQB Glossary, the word “bug” is synonymous with which of the following:

a) Error
b) Incident
c) Defect
d) Mistake

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# Sample Questions

- A phone is ringing in an adjacent cubicle momentarily distracts a programmer, causing him to improperly program the logic that checks the upper boundary of an input variable. Later, during system testing, a tester notices that this variable accepts input values. The improperly coded logic for the upper boundary check is:

a) The error
b) The defect
c) The root cause
d) The failure

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a) The error
**b) The defect**
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# Sample Questions

- Software testing activities should start:

  a) When the requirements have been formally documented

  b) As soon as possible in the development life cycle

  c) During the design stage

  d) During the stakeholder meeting

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# Sample Questions

- When what is visible to end-user is a deviation from the specific or expected behavior, this is called:

a) An error
b) A fault
c) A failure
d) A defect
e) A mistake

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# Sample Questions

- A company recently purchased a commercial off the shelf application to automate their bill paying process. They now plan to run an acceptance test against the package prior to putting it into production. Which of the following is their most likely reason for testing?

  a) To train the users

  b) To gather evidence for a lawsuit

  c) To detect bugs in the application

  d) To build confidence in the application

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- According to the ISTQB Glossary, a risk relates to which of the following?

a) Negtive consequence that could occur
b) Negative consequence that will occur
c) Negative consequence for the test object
d) Negative consequences that have occured

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- Debugging is:

  a) Checking that no unintended consequence have occured as a result of a fix

  b) Testing/checking whether the software performs correctly

  c) Identifying the cause of a defect, repairing the code and checking the fix is correct

  d) Checking that a previously reported defect has been corrected

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# Sample Questions

- When is testing complete ?

  a) When there is enough information for sponsors to make an informed decision about release

  b) When time and budget are exhausted

  c) When there are no remaining high priority defects outstanding

  d) When every data combination has been exercised successfully

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# Sample Questions

- A test team consistently finds between 90% and 95% of the defect present in the system under test. While the test manager understands that this is a good defect detection percentage for her test team and industry, senior management and executives remain disappointed in the test group saying that the test team misses too many bugs. Given that the users are generally happy with the system and that the failures which have occured have generally been low impact, which of the following testing principles is most likely to help the test manager explain to these managers and executives why some defects are likely to be missed

a) Exhaustive testing is impossible
b) Pesticide paradox
c) Defect clustering
d) Absence of errors fallacy

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- A programmer is working on code which is very complex. Which of the following is a general testing principle that may affect his work ?

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# Sample Questions

- What is COTS:

a) Commercial on-the-shelf software
b) Commercial off-the-shelf software
c) Common Offshore testing software

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# Sample Questions

- Which of the following is a major task of test planning:

a) Determining the test approach
b) Preparing test specifications
c) Evaluating exit criteria and reporting
d) Measuring and analyzing results

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# Sample Questions

- The following statements relate to activites that are part of the fundamental test process.
  - (i) Evaluating the testability of requirements
  - (ii) Repeating testing activities after changes
  - (iii) Designing the test environments set up
  - (iv) Developing and prioritizing test cases
  - (v) Verifying the environment is set up correctly

Which statement is true

1-(i) and (iii) are part of analysis and design, (ii), (iv), and (v) are part of test implementation and execution

2-(i) and (ii) are part of analysis and design, (iii), (iv) , and (v) are part of test implementation and execution

3-(i) and (v) are part of analysis and design, (ii),(iii), and (iv) are part of test implementation and execution

4-(i) and (iv) are part of analysis and design, (ii), (iii), and (v) are part of test implemetation and execution

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# Sample Questions

- Which of the following is a fundamental test activity ?

a) Test Planning and Design
b) Test Implementation and Execution
c) Evaluating Entry Criteria and Reporting
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# Sample Questions

- Which of the following is part of test closure activities:
  - i. Checking which planned deliverables have been delivered
  - ii.Defect report analysis
  - iii.Finalizing and archiving testware
  - iv.Analyzing lessons

a) i, ii, iv are true and iii is false
b) i, ii , iii are true and iv is false
c) i, iii, iv are true and ii is false
d) All of the above are true

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# Sample Questions

- Which of the following is not decided in the test planning phase ?

a) Types of Test Cases
b) Hardware and Software
c) Entry and Exit Criteria
d) Schedules and Deliverables

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# Sample Questions

- Evaluating Testability of the requirements and system are a part of which phase ?

a) Test Analysis and Design
b) Test Planning and Control
c) Test Implementation and Execution
d) Evaluating Exit Criteria and Reporting

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- Evaluating Testability of the requirements and system are a part of which phase ?

**a) Test Analysis and Design**

b) Test Planning and Control

c) Test Implementation and Execution

d) Evaluating Exit Criteria and Reporting

# Sample Questions

- Test planning has which of the following major tasks?
  - i. Determining the scope and risks, and identifying the objectives of testing
  - ii. Determining the test approach (techniques, test items, coverage, identifying and interfacing the teams involved in testing, testware)
  - iii. Reviewing the Test Basis (such as requirements, architecture, design, interface)
  - Determining the exit criteria

    a) i,ii,iv are true and iii is false
    b) i, iii,iv are true and ii is false
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# Sample Questions

- Which of the following are aids to good communication and which hinder it ?
  - (i) Try to understand how the other person feels
  - (ii) Communicate personal feelings, concentrating upon individuals
  - (iii) Confirm the other person has understood what you have said and vice versa
  - (iv) Emphasize the common goal of better quality
  - (v) Each discussion is a battle to be won

a) (i), (ii) and (iii) aid, (iv) and (v) hinder

b) (iii), (iv) and (v) aid, and (i) and (ii) hinder

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d) (ii), (iii) and (iv) aid, (i) and (v) hinder

# Sample Questions

- Which list of levels of tester independence is in the correct order, starting with the most independent first?

  a) Tests designed by the author; tests designed by another member of the development team; tests designed by someone from a different company

  b) Tests designed by someone from a different department within the company; tests designed by the author; tests designed by someone from a different company

  c) Tests designed by someone from a different company; tests designed by someone from a different department within the company; tests designed by another member of the development team

  d) Tests designed by someone from a different department within the company; tests designed by someone from a different company; tests designed by the author

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# Sample Questions

- What qualities must an individual possess to test effectively a software application:

a) Good communication skills
b) Good Error Guessing
c) Good Analytical skills
d) All Of The Above

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# Sample Questions

- **Defects are least costly as what stage of Development cycle.**

a. Analysis and Design

b. Construction

c. Requirements

d. Implementation

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# Chapter 2
# Testing Throughout The Software Life cycle
# 6 Questions
# 18 Questions
# End of Module 1

# Sample Questions

- Component Testing is also called as :

a) Unit Testing
b) Program Testing
c) Module Testing
d)System Component Testing

# Sample Questions

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**c) Module Testing**
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# Sample Questions

- Which of the following is a test type:

a) Component Testing
b) Functional Testing
c) Acceptance Testing
d)System Testing

# Sample Questions

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# Sample Questions

- The main focus of acceptance testing is:

  a) Finding faults in the system
  b) Ensuring that the system is acceptable to all users
  c) Testing by an independent test team
  d)Testing for a business perspective

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# Sample Questions

- Which option best describes objectives for test levels with a life-cycle model ?

a) Objectives are dependent on development model for each test level
b) Objectives should be generic for all test levels
c) The objectives of a test level don’t need to be defined in advance
d)Each level has objectives specific to that level

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# Sample Questions

- Contract and regulation testing is a part of:

a) System testing
b) Acceptance testing
c) Integration testing
d)Functional testing

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# Sample Questions

- Which of the following statements about component testing is not TRUE:

a) Component testing should be performed by development
b) Component testing is also known as isolation or module testing
c) Component testing should have completion criteria planned
d)Component testing does not involve regression testing

# Sample Questions

- Which of the following statements about component testing is not TRUE:

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# Sample Questions

- Integration testing has following characteristics:

a) It can be done in incremental manner
b) It is always done after system testing
c) It includes functional testing
d) It includes non-functional testing

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- Validation involves which of the following:

a) Helps to check the Quality of the Built Product
b) Helps to check that we have built the right product.
c) Helps in developing the product
d) Monitoring tool wastage and obsoleteness.

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- Repeated Testing of an already tested program, after modification, to discover any defects introduced or uncovered as a result of the changes in the software being tested or in another related or unrelated software component:
    a) Re Testing
    b) Confirmation Testing
    c) Regression Testing
    d) Negative Testing

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    a) Re Testing
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    **c) Regression Testing**
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# Sample Questions

- Regression testing should be performed

a) Every week
b) After the software has changed
c) As often as possible
d) When the environment has changed
e) When the project manager says

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# Sample Questions

- Which of the following is a true statement regarding the process of fixing emergency changes

  a) There is no time to test the change before it goes live, so only the best developers should do this work and should not involve testers as they slow down the process

  b) Only retest of the defect actually fixed

  c) Retest the changed area and then use risk assessment to decide on a reasonable subset of the whole regression test to run in case other parts of the system have been adversely affected

  d) Always run a full regression test of the whole system in case other parts of the system have been adversely affected

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# Sample Questions

- White Box Testing is:

a) Same as glass box testing
b) Same as clear box testing
c) Both A and B
d) None of the above

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- Functional system testing is

a) testing that the system functions with other systems
b) testing that the components that comprise the system function together
c) testing the end to end functionality of the system as a whole
d) testing the system performs functions within specified response times

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# Sample Questions

- Which of the following is correct ?

a) Impact analysis assesses the effect on the system of a defect found in regression testing

b) Impact analysis assesses the effect of a new person joining the regression test team

c) Impact analysis assesses whether or not a defect found in regression testing has been fixed correctly

d) Impact analysis assesses the effect of a change to the system to determine how much regression testing to do

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# Sample Questions

- Maintenance testing is triggered by:

a) Modification of system
b) Migration of system
c) Retirement of system

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# Sample Questions

- Which of the following uses Impact Analysis most?

a) Component testing
b) Non-functional system testing
c) User acceptance testing
d) Maintenance testing

# Sample Questions

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# Sample Questions

- Impact Analysis helps to decide

a) How much regression testing should be done.
b) Exit Criteria
c) How many more test cases need to written.
d) Different Tools to perform Regression Testing

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# Sample Questions

- **Match every stage of the software Development Life cycle with the Testing Life cycle:**

*i. Hi-level design a Unit tests*

*ii. Code b Acceptance tests*

*iii. Low-level design c System tests*

*iv. Business requirements d Integration tests*

# Sample Questions

- **Match every stage of the software Development Life cycle with the Testing Life cycle:**

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# Sample Questions

- **It is an unfair test to perform stress testing at the same time you perform load testing.**

a. True

b. False

# Sample Questions

- **It is an unfair test to perform stress testing at the same time you perform load testing.**

a. True

**b. False**

# Chapter 3
# Static Techniques
# 3 Questions
# 14 Questions

# Sample Questions

- What is the main purpose of Informal review?

  a) Find defects
  b) Inexpensive way to get some benefit
  c) Learning, gaining understanding, defect finding
  d) Discuss, make decisions, solve technical problems

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# Sample Questions

- The phases of formal review process are mentioned below, arrange them in the correct order

a)Planning
b)Review meeting
c)Rework
d)Individual preparations
e)Kick off
f)Follow Up

# Sample Questions

- The phases of formal review process are mentioned below, arrange them in the correct order

**Planning-Kick off-Individual Preparation-Review Meeting-Rework-Follow Up**

# Sample Questions

- Who is responsible for documenting all the issues, problems and open points that were identified during the review meeting

a)Reviewers
b)Moderator
c)Author
d)Scribe

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c) Learning, gaining understanding, defect finding
d) Discuss, make decisions, solve technical problems

# Sample Questions

- The planning phase of a formal review includes the following

a) Explaining the objectives
b) Selecting the personnel, allocating roles
c) Follow up
d) Individual meeting preparations

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a) Explaining the objectives
**b) Selecting the personnel, allocating roles**
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# Sample Questions

- Reviewers are also called as:

  a) Checkers
  b) Inspectors
  c) Recorders
  d) Both a and b are true

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# Sample Questions

- Which of the following activities differentiate a walkthrough from a formal review

  a) A walkthrough does not follow a defined process
  b) For a walkthrough, individual preparation by the reviewers is optional
  c) A walkthrough requires meeting
  d) A walkthrough finds the cause of failures, while formal review finds the failures

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# Sample Questions

- A peer review that relies on visual examination of documents to detect defects

a) Technical review
b) Inspection
c) Walkthrough
d) Formal review

# Sample Questions

- A peer review that relies on visual examination of documents to detect defects

a) Technical review
**b) Inspection**
c) Walkthrough
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# Sample Questions

- The Kick Off phase of a formal review includes the following

a) Explaining the objective
b) Individual meeting preparations
c) Fixing defects found typically done by author
d) Follow up

# Sample Questions

- The Kick Off phase of a formal review includes the following

a) **Explaining the objective**
b) Individual meeting preparations
c) Fixing defects found typically done by author
d) Follow up

# Sample Questions

- Who decides which part of the document has to be reviewed

  a) Moderator
  b) Author
  c) Moderator and Author together
  d) Manager

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b) Author
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# Sample Questions

- Defects discovered by static analysis tools include:

  a)Variables that are never used
  b)Security vulnerabilities
  c)Programming standard violations
  d)Uncalled functions and procedures

# Sample Questions

- Defects discovered by static analysis tools include:

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**b)Security vulnerabilities**
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# Sample Questions

- Which one of the following examples describes a typical benefit of static analysis supported by tools:

  a)Static analysis supported by tools may find defects prior to manual test execution

  b)By using static analysis tools user acceptance testing can be shortened because the users need to execute less tests

  c) Static analysis supported by tools prevents business analysts and requirement engineers building software models (e.g., static transition diagrams), which do not match the requirements

  d)By performing static analysis of the code supported by the tools the need for the developers doing unit testing is decreased

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**a) Variables that are never used**
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# Sample Questions

- Which of the following is false ?

a) Dynamic testing and static testing are complementary and find different defects
b) Reviews are proven to be far more effective with trained participants
c) Spelling mistakes are recorded in the reviews but are not discussed
d) Static analysis is done after formal review

# Sample Questions

- Which of the following is false ?

a) Dynamic testing and static testing are complementary and find different defects
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c) Spelling mistakes are recorded in the reviews but are not discussed
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# Chapter 4
# Test Design Techniques
# 12 Questions
# (29 Questions)

# Equivalence Partitioning

- An employee's bonus needs to be calculated. It cannot become negative, but it can be calculated to zero. The bonus is based on the duration of the employment. An employee can be employed for less than or equal to 2 years, more than 2 years but less than 5 years, 5 to 10 years, or longer than 10 years. Depending on this period of employment, an employee will get either no bonus or a bonus of 10 %, 25 % or 35 %.
- How many equivalence partitions are needed to test the calculation of the bonus ?

(3-5-2-4)

# Equivalence Partitioning

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- How many equivalence partitions are needed to test the calculation of the bonus ?

(3-5-2-**4**)

# Equivalence Partitioning

- Which of the following statements are true for the equivalence partitioning test techniques?
  A. Divides possible inputs into classes that have the same behavior
  B. Uses both valid and invalid partitions
  C. Makes use only of valid partitions
  D. Must include at least two values from every equivalence partition
  E. Can be used only for testing equivalence partitions inputs from a Graphical User Interface

# Equivalence Partitioning

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  - **A. Divides possible inputs into classes that have the same behavior**
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  - E. Can be used only for testing equivalence partitions inputs from a Graphical User Interface

# Equivalence Partitioning

- In a system designed to work out the tax to be paid: An employee has £4000 of salary tax free. The next £1500 is taxed at 10% The next £28000 is taxed at 22% Any further amount is taxed at 40% Which of these groups of numbers would fall into the same equivalence class?
  A. 4800, 14000, 28000
  B. 5200, 5500, 28000
  C. 28001, 32000, 35000
  D. 5800, 28000, 32000

# Equivalence Partitioning

- In a system designed to work out the tax to be paid: An employee has £4000 of salary tax free. The next £1500 is taxed at 10% The next £28000 is taxed at 22% Any further amount is taxed at 40% Which of these groups of numbers would fall into the same equivalence class?
  A. 4800, 14000, 28000
  B. 5200, 5500, 28000
  C. 28001, 32000, 35000
  **D. 5800, 28000, 32000**

# Equivalence Partitioning

- In a system designed to work out the tax to be paid: An employee has £4000 of salary tax free. The next £1500 is taxed at 10% The next £28000 is taxed at 22% Any further amount is taxed at 40% Which of these is a valid boundary value analysis test case?
  A. 1500
  B. 32001
  C. 33501
  D. 28000

# Equivalence Partitioning

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  A. 1500
  B. 32001
  **C. 33501**
  D. 28000

# Equivalence Partitioning

- A programmer validates a numeric field as follows:

  Values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected

  Which of the following input values cover all of the equivalence partitions?

  A. 10, 11, 12
  B. 3, 20, 21
  C. 3, 10, 22
  D. 10, 21, 22

# Equivalence Partitioning

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  Values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected

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  A. 10, 11, 12
  B. 3, 20, 21
  **C. 3, 10, 22**
  D. 10, 21, 22

# Boundary-value Analysis

- Order numbers on a stock control system can range between 10000 and 99999 inclusive. Which of the following inputs might be a result of designing tests for only valid equivalence classes and valid boundaries
  A. 1000, 5000, 99999
  B. 9999, 50000, 100000
  C. 10000, 50000, 99999
  D. 10000, 99999
  E. 9999, 10000, 50000, 99999, 10000

# Boundary-value Analysis

- Order numbers on a stock control system can range between 10000 and 99999 inclusive. Which of the following inputs might be a result of designing tests for only valid equivalence classes and valid boundaries
  A. 1000, 5000, 99999
  B. 9999, 50000, 100000
  **C. 10000, 50000, 99999**
  D. 10000, 99999
  E. 9999, 10000, 50000, 99999, 10000

# Boundary-value Analysis

- A programmer validates a numeric field as follows:

  Values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected

  Which of the following input values cover The most boundary values?

  A. 9, 10, 11, 12
  B. 9, 10, 21, 22
  C. 10, 11, 21, 22
  D. 10, 11, 20, 21

# Boundary-value Analysis

- A programmer validates a numeric field as follows:

  Values less than 10 are rejected, values between 10 and 21 are accepted, values greater than or equal to 22 are rejected

  Which of the following input values cover The most boundary values?

  A. 9, 10, 11, 12
  **B. 9, 10, 21, 22**
  C. 10, 11, 21, 22
  D. 10, 11, 20, 21

# Boundary-value Analysis

- An input field takes the year of birth between 1900 and 2004. The boundary values for testing this field are

A. 0, 1900, 2004, 2005
B. 1900, 2004
C. 1899, 1900, 2004, 2005
D. 1899, 1900, 1901, 2003, 2004, 2005

# Boundary-value Analysis

- An input field takes the year of birth between 1900 and 2004. The boundary values for testing this field are

A. 0, 1900, 2004, 2005
B. 1900, 2004
**C. 1899, 1900, 2004, 2005**
D. 1899, 1900, 1901, 2003, 2004, 2005

# Decision Table Testing

- What is the expected result for each of the following test cases?
  - A. Citibank card member, holding a silver room
  - B. Non Citibank member, holding a platinum room

A. A – don't offer any upgrade, B – Don't offer any upgrade
B. A – Don't offer any upgrade, B – Offer upgrade to gold
C. A – Offer upgrade to silver, B – Offer upgrade to silver
D. A – Offer upgrade to gold, B – Don't offer any upgrade

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| Citibank Card Member | Yes | Yes | No | No |
| Type of Room | Silver | Platinum | Silver | Platinum |
| **Actions** | | | | |
| Offer upgrade to Gold Luxury | Yes | No | No | No |
| Offer upgrade to Silver | N/A | Yes | N/A | No |

# Decision Table Testing

- What is the expected result for each of the following test cases?
  - A. Citibank card member, holding a silver room
  - B. Non Citibank member, holding a platinum room

A. A – don't offer any upgrade, B – Don't offer any upgrade

B. A – Don't offer any upgrade, B – Offer upgrade to gold

C. A – Offer upgrade to silver, B – Offer upgrade to silver

**D. A – Offer upgrade to gold, B – Don't offer any upgrade**

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| Citibank Card Member | Yes | Yes | No | No |
| Type of Room | Silver | Platinum | Silver | Platinum |
| **Actions** | | | | |
| Offer upgrade to Gold Luxury | Yes | No | No | No |
| Offer upgrade to Silver | N/A | Yes | N/A | No |

# Decision Table Testing

What is the expected result for each of the following test cases?

A.TC1: Fred is a 32 year old smoker resident in London

B.TC3: Jean-Michel is a 65 year non-smoker resident in Paris

A. A – Insure, 10% discount, B – Insure, no discount.
B. A – Don’t insure, B – Don’t insure
C. A – Insure, no discount, B – Don’t insure.
D. A – Insure, no discount, B – Insure with 10% discount.

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| **UK resident?** | **False** | **True** | **True** | **True** |
| **Age between 18 – 55?** | **Don’t care** | **False** | **True** | **True** |
| **Smoker?** | **Don’t care** | **Don’t care** | **False** | **True** |
| **Actions** | | | | |
| **Insure client?** | **False** | **False** | **True** | **True** |
| **Offer 10% discount?** | **False** | **False** | **True** | **False** |

# Decision Table Testing

What is the expected result for each of the following test cases?

A.TC1: Fred is a 32 year old smoker resident in London

B.TC3: Jean-Michel is a 65 year non-smoker resident in Paris

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**C. A – Insure, no discount, B – Don't insure.**

D. A – Insure, no discount, B – Insure with 10% discount.

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| **UK resident?** | **False** | **True** | **True** | **True** |
| **Age between 18 – 55?** | **Don't care** | **False** | **True** | **True** |
| **Smoker?** | **Don't care** | **Don't care** | **False** | **True** |
| **Actions** | | | | |
| **Insure client?** | **False** | **False** | **True** | **True** |
| **Offer 10% discount?** | **False** | **False** | **True** | **False** |

# Decision Table Testing

What is the expected result for each of the following test cases?

1-Frequent flyer member, travelling in Business class

2- Non-member, travelling in Economy class

A. A – Don’t offer any upgrade, B – Don’t offer any upgrade.

B. A – Don’t offer any upgrade, B – Offer upgrade to Business class.

C. A – Offer upgrade to First, B – Don’t offer any upgrade.

D. A – Offer upgrade to First, B – Offer upgrade to Business class.

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| **Frequent Flyer Member** | **Yes** | **Yes** | **No** | **No** |
| **Class** | **Business** | **Economy** | **Business** | **Economy** |
| **Actions** | | | | |
| **Offer upgrade to First** | **Yes** | **No** | **No** | **No** |
| **Offer upgrade to Business** | **N/A** | **Yes** | **N/A** | **No** |

# Decision Table Testing

What is the expected result for each of the following test cases?

1-Frequent flyer member, travelling in Business class

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**C. A – Offer upgrade to First, B – Don’t offer any upgrade.**

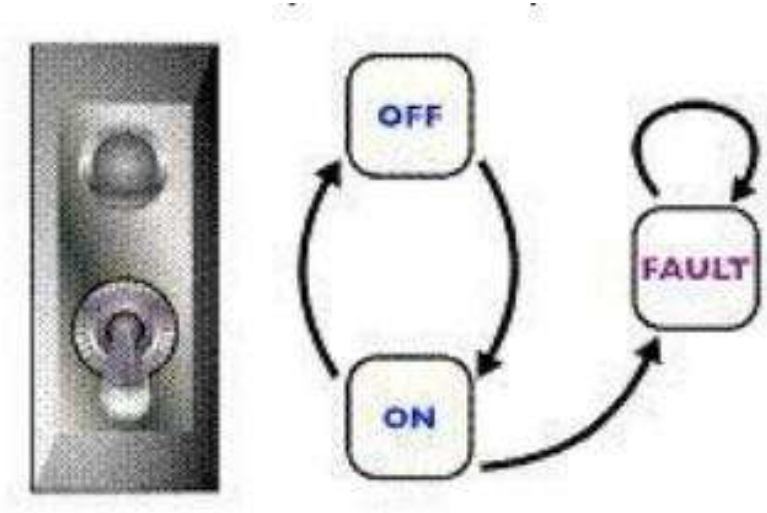
D. A – Offer upgrade to First, B – Offer upgrade to Business class.

| | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
|---|---|---|---|---|
| **Conditions** | | | | |
| **Frequent Flyer Member** | **Yes** | **Yes** | **No** | **No** |
| **Class** | **Business** | **Economy** | **Business** | **Economy** |
| **Actions** | | | | |
| **Offer upgrade to First** | **Yes** | **No** | **No** | **No** |
| **Offer upgrade to Business** | **N/A** | **Yes** | **N/A** | **No** |

# State Transition Testing

- Consider the above state transition diagram of a switch, Which of the following represents an invalid state transition

A. Off to ON
B. On to Off
C. Fault to On



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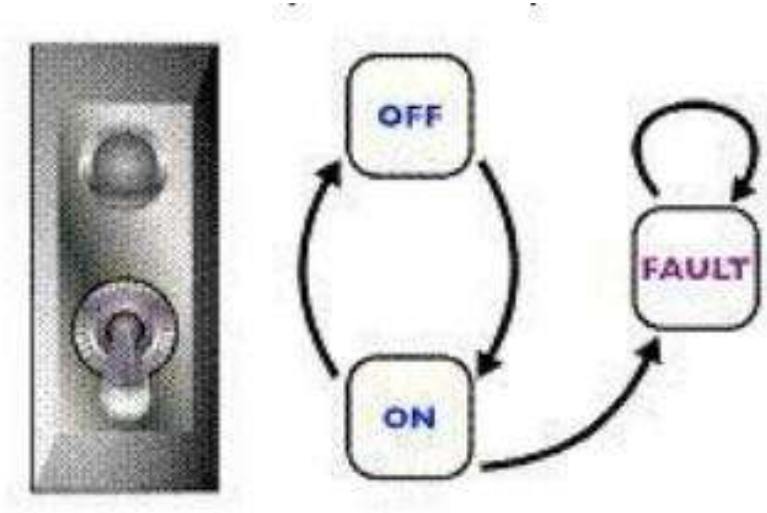
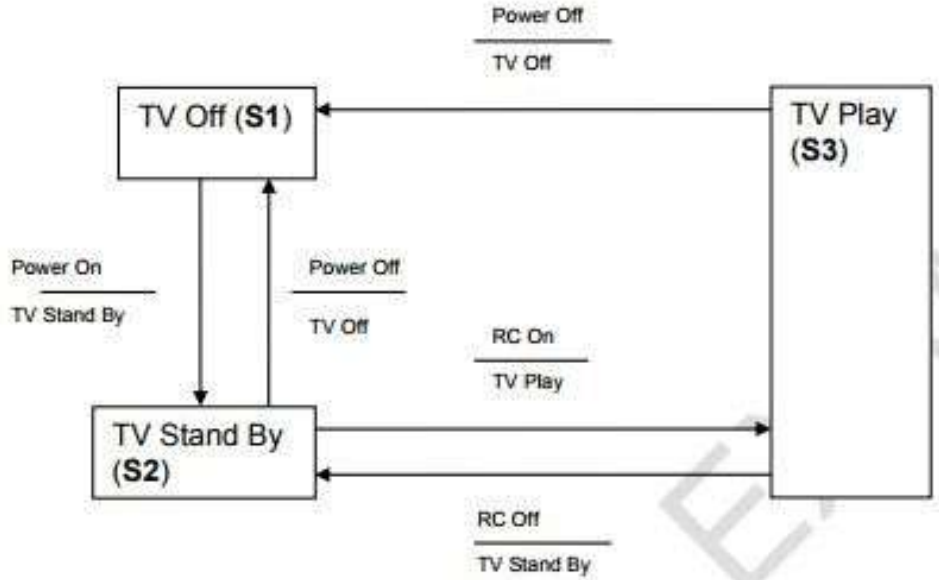





| Test Case | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Start state | S1 | S1 | S2 | S2 | S3 | S3 | S3 |
| Input | Press Power On | Press Power On | Press RC On | Press RC On | Press RC Off | Press Power Off | Press RC Off |
| Expected Output | TV Stand By | TV Stand By | TV Play | TV Play | TV Stand By | TV OFF | TV Stand By |
| Next state | S2 | S2 | S3 | S3 | S2 | S1 | S2 |
| Input | Press Power Off | Press RC On | Press Power Off | Press RC Off | Press RC On | Press Power On | Press Power Off |
| Expected Output | TV Off | TV Play | TV Off | TV Stand By | TV Play | TV Stand By | TV Off |
| Finish state | S1 | S3 | S1 | S2 | S3 | S2 | S1 |

- Consider the following state transition diagram and test case table:

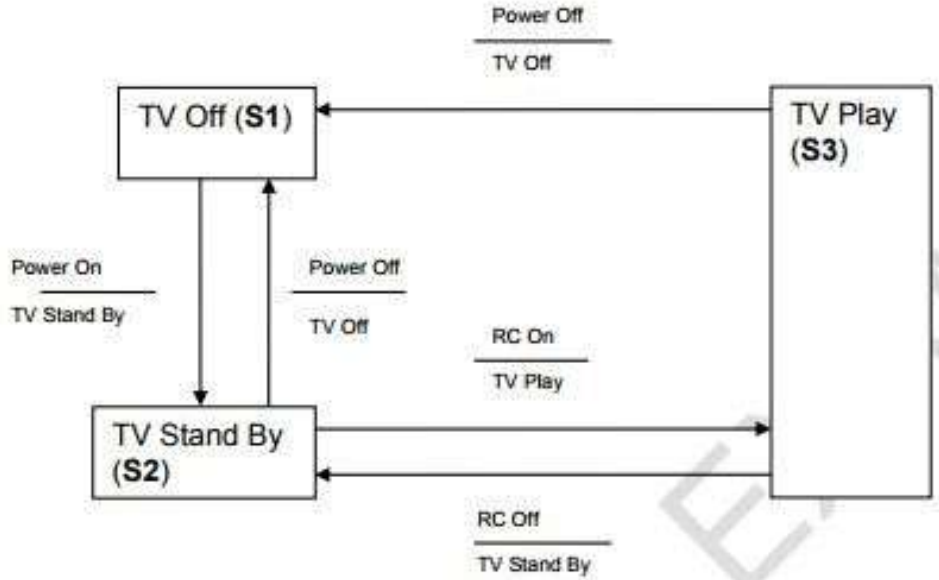
  Which of the following statements are true

A. The test case table exercises the shortest number of transitions.

B. The test case gives only the valid state transitions.

C. The test case gives only the invalid state transitions.

D. The test case exercises the longest number of transitions.




| Test Case | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Start state | S1 | S1 | S2 | S2 | S3 | S3 | S3 |
| Input | Press Power On | Press Power On | Press RC On | Press RC On | Press RC Off | Press Power Off | Press RC Off |
| Expected Output | TV Stand By | TV Stand By | TV Play | TV Play | TV Stand By | TV OFF | TV Stand By |
| Next state | S2 | S2 | S3 | S3 | S2 | S1 | S2 |
| Input | Press Power Off | Press RC On | Press Power Off | Press RC Off | Press RC On | Press Power On | Press Power Off |
| Expected Output | TV Off | TV Play | TV Off | TV Stand By | TV Play | TV Stand By | TV Off |
| Finish state | S1 | S3 | S1 | S2 | S3 | S2 | S1 |

- Consider the following state transition diagram and test case table:

  Which of the following statements are true

A. The test case table exercises the shortest number of transitions.

**B. The test case gives only the valid state transitions.**

C. The test case gives only the invalid state transitions.

D. The test case exercises the longest number of transitions.

# Black Box Testing

- You have started specification-based testing of a program. It calculates the greatest common divisor (GCD) of two integers (A and B) greater than zero

  calcGCD (A, B);

  The following test cases (TC) have been specified →

  Which test technique has been applied in order to through 6?

  a)Boundary value Analysis

  b) State Transition Testing

  c) Equivalence Partitioning

  d) Decision Testing

| TC | A | B |
|---|---|---|
| 1 | 1 | 1 |
| 2 | INT_MAX | INT_MAX |
| 3 | 1 | 0 |
| 4 | 0 | 1 |
| 5 | INT_MAX+1 | 1 |
| 6 | 1 | INT_MAX+1 |

# Black Box Testing

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calcGCD (A, B);

The following test cases (TC) have been specified →

| TC | A | B |
|---|---|---|
| 1 | 1 | 1 |
| 2 | INT_MAX | INT_MAX |
| 3 | 1 | 0 |
| 4 | 0 | 1 |
| 5 | INT_MAX+1 | 1 |
| 6 | 1 | INT_MAX+1 |

Which test technique has been applied in order to through 6?

**a)Boundary value Analysis**

b) State Transition Testing

c) Equivalence Partitioning

d) Decision Testing

**4.3 Black Box Techniques**

# Statement Testing and Coverage

- Minimum Tests required for statement coverage

A. Statement coverage is 4
B. Statement Coverage is 1
C. Statement Coverage is 3
D. Statement Coverage is 2

```
Disc = 0
Order-qty=0
Read Order-qty
If Order-qty >=20 then
Disc=0.05
If Order-qty >=100 then
Disc=0.1
End if
End if
```

# Statement Testing and Coverage

- Minimum Tests required for statement coverage

A. Statement coverage is 4
**B. Statement Coverage is 1**
C. Statement Coverage is 3
D. Statement Coverage is 2

```
Disc = 0
Order-qty=0
Read Order-qty
If Order-qty >=20 then
Disc=0.05
If Order-qty >=100 then
Disc=0.1
End if
End if
```

# Statement Testing and Coverage

- How many test cases are necessary to cover all the possible sequences of statements (paths) for the following program fragment?

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

```
Print sum (int a, int b) {
        int result = a + b;
        if (result > 0)
                print (“red”, result)
        else if (result < 0)
                print (“blue”, result)
}
```

# Statement Testing and Coverage

- How many test cases are necessary to cover all the possible sequences of statements (paths) for the following program fragment?

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

```
Print sum (int a, int b) {
        int result = a + b;
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                print (“red”, result)
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                print (“blue”, result)
}
```

# Statement Testing and Coverage

- Statement Coverage will not check for the following

A. Missing statements
B. Unused Branches
C. Dead Code
D. Unused Statement

# Statement Testing and Coverage

- Statement Coverage will not check for the following

A. **Missing statements**
B. Unused Branches
C. Dead Code
D. Unused Statement

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 2, Branch Coverage is 2
B. Statement Coverage is 3, Branch Coverage is 2
C. Statement Coverage is 1, Branch Coverage is 2
D. Statement Coverage is 4, Branch Coverage is 2

```
Read P
Read Q
If p+q > 100 then
Print “Large”
End if
If p > 50 then
Print “Plarge”
End if
```

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 2, Branch Coverage is 2
B. Statement Coverage is 3, Branch Coverage is 2
**C. Statement Coverage is 1, Branch Coverage is 2**
D. Statement Coverage is 4, Branch Coverage is 2

```
Read P
Read Q
If p+q > 100 then
Print “Large”
End if
If p > 50 then
Print “Plarge”
End if
```

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 1, Branch Coverage is 3
B. Statement Coverage is 2, Branch Coverage is 2
C. Statement Coverage is 2, Branch Coverage is 3
D. Statement Coverage is 3, Branch Coverage is 3
E. Statement Coverage is 3, Branch Coverage is 2

```
If A > B Then
C = A – B
ELSE
C = A + B
ENDIF
Read D
IF C = D Then
Print “Error”
ENDIF
```

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 1, Branch Coverage is 3
**B. Statement Coverage is 2, Branch Coverage is 2**
C. Statement Coverage is 2, Branch Coverage is 3
D. Statement Coverage is 3, Branch Coverage is 3
E. Statement Coverage is 3, Branch Coverage is 2

```
If A > B Then
C = A – B
ELSE
C = A + B
ENDIF
Read D
IF C = D Then
Print “Error”
ENDIF
```

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 1, Branch Coverage is 1
B. Statement Coverage is 1, Branch Coverage is 2
C. Statement Coverage is 1, Branch Coverage is 3
D. Statement Coverage is 2, Branch Coverage is 2
E. Statement Coverage is 2, Branch Coverage is 3

Switch PC on
Start “outlook”
If outlook appears Then
Send an email
Close outlook

# Decision Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

A. Statement Coverage is 1, Branch Coverage is 1
**B. Statement Coverage is 1, Branch Coverage is 2**
C. Statement Coverage is 1, Branch Coverage is 3
D. Statement Coverage is 2, Branch Coverage is 2
E. Statement Coverage is 2, Branch Coverage is 3

Switch PC on
Start “outlook”
If outlook appears Then
Send an email
Close outlook

# Statement Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

**Pick up and read the newspaper**
**Look at what is on television**
**If there is a program that you are interested in watching then switch the television on and watch the program**
**Otherwise**
**Continue reading the newspaper**
**If there is a crossword in the newspaper then try and complete the crossword**

A. SC =1 and DC = 1
B. SC = 1 and DC = 2
C. SC = 1 and DC = 3
D. SC = 2 and DC = 2
E. SC = 2 and DC = 3

# Statement Testing and Coverage

- Minimum Tests required for statement coverage and branch coverage

**Pick up and read the newspaper**
**Look at what is on television**
**If there is a program that you are interested in watching then switch the television on and watch the program**
**Otherwise**
**Continue reading the newspaper**
**If there is a crossword in the newspaper then try and complete the crossword**

A. SC =1 and DC = 1
B. SC = 1 and DC = 2
C. SC = 1 and DC = 3
D. SC = 2 and DC = 2
**E. SC = 2 and DC = 3**

# Decision Testing and Coverage

- **Now decide the minimum number of tests that are needed to ensure that all the questions have been asked, all combinations have occurred and all replies given.**
- 3
- 4
- 5
- 6

**Ask: "What type of ticket do you require, single or return?"**
**IF the customer wants 'return'**
**Ask: "What rate, Standard or Cheap-day?"**
**IF the customer replies 'Cheap-day'**
**Say: "That will be £11:20"**
**ELSE**
**Say: "That will be £19:50"**
**ENDIF**
**ELSE**
**Say: "That will be £9:75"**
**ENDIF**

# Decision Testing and Coverage

- **Now decide the minimum number of tests that are needed to ensure that all the questions have been asked, all combinations have occurred and all replies given.**
- **3**
- 4
- 5
- 6

**Ask: "What type of ticket do you require, single or return?"**
**IF the customer wants 'return'**
**Ask: "What rate, Standard or Cheap-day?"**
**IF the customer replies 'Cheap-day'**
**Say: "That will be £11:20"**
**ELSE**
**Say: "That will be £19:50"**
**ENDIF**
**ELSE**
**Say: "That will be £9:75"**
**ENDIF**

# Equivalence Partitioning

- Consider the following statements
  i. 100% statement coverage guarantees 100% branch coverage.
  ii. 100% branch coverage guarantees 100% statement coverage.
  iii. 100% branch coverage guarantees 100% decision coverage.
  iv. 100% decision coverage guarantees 100% branch coverage.
  v. 100% statement coverage guarantees 100% decision coverage

# Equivalence Partitioning

- Consider the following statements
  i. 100% statement coverage guarantees 100% branch coverage.
  **ii. 100% branch coverage guarantees 100% statement coverage.**
  **iii. 100% branch coverage guarantees 100% decision coverage.**
  **iv. 100% decision coverage guarantees 100% branch coverage.**
  v. 100% statement coverage guarantees 100% decision coverage

# Sample Questions

- Which is not true-The black box tester
  1. should be able to understand a functional specification or requirements document
  2. should be able to understand the source code.
  3. is highly motivated to find faults
  4. is creative to find the system’s weaknesses

# Sample Questions

- Which is not true-The black box tester
  1. should be able to understand a functional specification or requirements document
  2. **should be able to understand the source code.**
  3. is highly motivated to find faults
  4. is creative to find the system's weaknesses

# Sample Questions

- A test design technique is
  1. a process for selecting test cases
  2. a process for determining expected outputs
  3. a way to measure the quality of software
  4. a way to measure in a test plan what has to be done

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# Sample Questions

- What is the important criterion in deciding what testing technique to use?
  1. how well you know a particular technique
  2. the objective of the test
  3. how appropriate the technique is for testing the application
  4. whether there is a tool to support the technique

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# Sample Questions

- A common test technique during component test is
  1. Statement and branch testing
  2. Usability testing
  3. Security testing
  4. Performance testing

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# Sample Questions

- Statement Coverage will not check for the following.
  1. Missing Statements
  2. Unused Branches
  3. Dead Code
  4. Unused Statement

# Sample Questions

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# Sample Questions

- Error guessing
  1. supplements formal test design techniques.
  2. can only be used in component, integration and system testing.
  3. is only performed in user acceptance testing.
  4. is not repeatable and should not be used.

# Sample Questions

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End of Module 4

# Sample Questions

- **Which of the following is true about White and Black Box Testing Technique:**

a) Equivalence partitioning, Decision Table and Control flow are White box Testing Techniques.

b) Equivalence partitioning , Boundary Value Analysis , Data Flow are Black Box Testing Techniques.

c) Equivalence partitioning , State Transition , Use Case Testing are black box Testing Techniques.

d) Equivalence Partitioning , State Transition , Use Case Testing and Decision Table are White Box Testing Techniques.

# Sample Questions

- **Which of the following is true about White and Black Box Testing Technique:**

a) Equivalence partitioning, Decision Table and Control flow are White box Testing Techniques.

b) Equivalence partitioning , Boundary Value Analysis , Data Flow are Black Box Testing Techniques.

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d) Equivalence Partitioning , State Transition , Use Case Testing and Decision Table are White Box Testing Techniques.

# Sample Questions

- **Features of White Box Testing Technique**

*i. We use explicit knowledge of the internal workings of the item being tested to select the test data.*

*ii. Uses specific knowledge of programming code to examine outputs and assumes that the tester knows the path of logic in a unit or a program.*

*iii. Checking for the performance of the application*

*iv. Also checks for functionality.*

# Sample Questions

- **Features of White Box Testing Technique**

***i. We use explicit knowledge of the internal workings of the item being tested to select the test data.***

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# Sample Questions

- **One technique of Black Box testing is Equivalence Partitioning. In a program statement that accepts only one choice from among 10 possible choices, numbered 1 through 10, the middle partition would be from ____ to___**

a) 4 to 6

b) 0 to 10

c) 1 to 10

d) None of the above

# Sample Questions

- **One technique of Black Box testing is Equivalence Partitioning. In a program statement that accepts only one choice from among 10 possible choices, numbered 1 through 10, the middle partition would be from ____ to___**

a) 4 to 6

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# Sample Questions

- **Find the Equivalence class for the following test case. Enter a number to test the validity of being accepting the numbers between 1 and 99**

a) All numbers < 1

b) All numbers > 99

c) Number = 0

d) All numbers between 1 and 99

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# Sample Questions

- **Given the following specification, which of the following values for age are in the SAME equivalence partition? If you are less than 18, you are too young to be insured. Between 18 and 30 inclusive, you will receive a 20% discount. Anyone over 30 is not eligible for a discount.**

A. 17, 18, 19.

B. 29, 30, 31.

C. 18, 29, 30.

D. 17, 29, 31.

# Sample Questions

- **Given the following specification, which of the following values for age are in the same equivalence partition? If you are less than 18, you are too young to be insured. Between 18 and 30 inclusive, you will receive a 20% discount. Anyone over 30 is not eligible for a discount.**

A. 17, 18, 19.

B. 29, 30, 31.

**C. 18, 29, 30.**

D. 17, 29, 31.

# Decision Testing and Coverage

- How many decisions should be tested in this code in order to achieve 100% decision coverage?

**WHILE (condition A)**
**Do B**
**END WHILE**

- 2
- Indefinite
- 1
- 4

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WHILE (condition A)
Do B
END WHILE
```

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# Sample Questions

- **In a flight reservation system, the number of available seats in each plane model is an input. A plane may have any positive number of available seats, up to the given capacity of the plane. Using Boundary Value analysis, a list of available – seat values were generated. Which of the following lists is correct?**

  A. 1, 2, capacity -1, capacity, capacity plus 1

  B. 0, 1, capacity, capacity plus 1

  C. 0, 1, 2, capacity plus 1, a very large number

  D. 0, 1, 10, 100, capacity, capacity plus one

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# Sample Questions

- **Which of the following is a valid collection of equivalence classes for the following problem: An integer field shall contain values from and including 1 to and including 15**

A. Less than 1, 1 through 15, more than 15
B. Negative numbers, 1 through 15, above 15
C. Less than 1, 1 through 14, more than 15
D. Less than 0, 1 through 14, 15 and more

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# Chapter 5
# Test Management
# 8 Questions
# (21 Questions)

# Modal Questions

- Which of the following is the task of a Test Lead / Leader:

i. Interaction with the Test Tool vendor to identify best ways to leverage test tool on the project
ii. Write Test Summary Reports based on the information gathered during testing
iii. Decide what should be automated, to what degree and how
iv. Create the Test Specifications

# Modal Questions

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# Modal Questions

- Which of the following could be a disadvantage of independent testing

i. Developer and independent testing will overlap and waste resources
ii. Communication is limited between independent testers and developers
iii. Developers can lose a sense of responsibility for quality
iv. Independent testers are slow and delay the project schedule

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# Modal Questions

- Stochastic testing using statistical information or operational profiles uses the following method:
  a) Heuristic Testing approach
  b) Methodical testing approach
  c) Model based testing approach
  d) Process or standard compliant testing approach

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# Modal Questions

- Which of the following methods of test estimations rely on information captured from previous projects
  a) Test Point based
  b) Expert based
  c) Metric based
  d) Experience based

# Modal Questions

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# Modal Questions

- Which of the following is the most important difference between the metrics based approach and the expert based approach to test estimation
  a) The metrics based approach is more accurate than the expert based approach
  b) The metrics based approach uses calculations from historical data while the expert based approach relies on team wisdom
  c) The metrics based approach can be used to verify an estimate created using the expert based approach, but not vice versa
  d) The expert based approach takes longer than the metrics based approach

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# Modal Questions

- Which of the following are typical test exit criteria
  a) Thoroughness measures, reliability measures, test cost, schedule, state of defect correction and residual risks
  b) Thoroughness measures, reliability measures, degree of tester independence and product completeness
  c) Thoroughness measures, reliability measures, test cost, time to market and product completeness, availability of testable code
  d) Time to market, residual defects, tester qualification, degree of tester independence, thoroughness measures and test cost

# Modal Questions

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# Modal Questions

- What is the difference between project risks and product risks:
  - Project risks are potential failure areas in the software or system; product risks are risks that surround a project's capability to deliver its objectives
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  - Project risks are risks that delivered software will not work; product risks are typically related to supplier issues, organizational factors and technical issues.

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# Modal Questions

- What information need not be included in a test incident report

  a) How to fix the fault

  b) How to reproduce the fault

  c) Test environment details

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# Modal Questions

- Incident would not be raised against:
    a) Requirements
    b) Documentation
    c) Test Cases
    d) Improvements suggested by users

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# Modal Questions

- Which of the following are false

a) An incident can be raised against documentation

b) Incidents can be analyzed to assist in test process improvement

c) Incidents occur when expected and actual results differ

d) Incidents should always be investigated and resolved

# Modal Questions

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# Modal Questions

- **Which of the following is NOT included in the Test Plan document of the Test Documentation Standard:**

a) Test items (i.e. software versions)

b) What is not to be tested

c) Test environments

d) Quality plans

e) Schedules and deadlines

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# Modal Questions

- **What statement about expected outcomes is FALSE**

a) expected outcomes are defined by the software's behaviour

b) expected outcomes are derived from a specification, not from the code

c) expected outcomes include outputs to a screen and changes to files and databases

d) expected outcomes should be predicted before a test is run

e) expected outcomes may include timing constraints such as response times

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# Modal Questions

- **In which order should tests be run?**

a. the most important tests first

b. the most difficult tests first(to allow maximum time for fixing)

c. the easiest tests first(to give initial confidence)

d. the order they are thought of

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# Modal Questions

- **Testware(test cases, test dataset)**

a. needs configuration management just like requirements, design and code

b. should be newly constructed for each new version of the software

c. is needed only until the software is released into production or use

d. does not need to be documented and commented, as it does not form part of the released software system

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# Modal Questions

- **An incident logging system**

a. only records defects

b. is of limited value

c. is a valuable source of project information during testing if it contains all incidents

d. should be used only by the test team.

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- **Increasing the quality of the software, by better development methods, will affect the time needed for testing (the test phases) by:**

a. reducing test time

b. no change

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# Modal Questions

- **In prioritizing what to test, the most important objective is to:**

a) find as many faults as possible.

b) test high risk areas.

c) obtain good test coverage.

d) test whatever is easiest to test.

# Modal Questions

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b) An incident occurs when expected and actual results differ.

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- **Which of the following is NOT true of incidents?**

a) Incident resolution is the responsibility of the author of the software under test.

b) Incidents may be raised against user requirements.

c) Incidents require investigation and/or correction.

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# Modal Questions

- **Which of the following would NOT normally form part of a test plan?**

a) Features to be tested

b) Incident reports

c) Risks

d) Schedule

# Modal Questions

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# Modal Questions

- **A configuration management system would NOT normally provide:**

a) linkage of customer requirements to version numbers.

b) facilities to compare test results with expected results.

c) the precise differences in versions of software component source code.

d) restricted access to the source code library.

# Modal Questions

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End of module 4

# Modal Questions

- **_____ is monitoring defects from the time of recording until satisfactory resolution has been determined**

a. Quality measurement

b. Defect measurement

c. Defect Tracking

d. None of the above

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**c. Defect Tracking**

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# Chapter 6
# Tool Support for Testing
# 4 Questions
# (8 Questions)

# Modal Questions

- The place to start if you want to use a new test tool is:

a) Attend a tool exhibition

b) Invite a vendor to give a demo

c) Analyze your needs and requirements

d) Find out what your budget would be for the tool

e) Search the Internet

# Modal Questions

- The place to start if you want to use a new test tool is:

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b) Invite a vendor to give a demo

**c) Analyze your needs and requirements**

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# Modal Questions

- When a new testing tool is purchased, it should be used first by:
  - a) A small team to establish the best way to use the tool
  - b) Everyone who may eventually have some use for the tool
  - c) The independent testing team
  - d) The managers to see what projects it should be used in
  - e) The vendor contractor to write the initial scripts

# Modal Questions

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  d) The managers to see what projects it should be used in

  e) The vendor contractor to write the initial scripts

# Modal Questions

- Given the following types of tool, which tools would typically be used by developers and which by an independent test team:

  i. static analysis

  ii. performance testing

  iii. test management

  iv. dynamic analysis

  v. test running

  vi. test data preparation

a) developers would typically use i, iv and vi; test team ii, iii and v
b) developers would typically use i and iv; test team ii, iii, v and vi
c) developers would typically use i, ii, iii and iv; test team v and vi
d) developers would typically use ii, iv and vi; test team I, ii and v
e) developers would typically use i, iii, iv and v; test team ii and vi

# Modal Questions

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**b) developers would typically use i and iv; test team ii, iii, v and vi**

c) developers would typically use i, ii, iii and iv; test team v and vi

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# Modal Questions

- A typical commercial test execution tool would be able to perform all of the following except:

A. Generating expected output
B. Replaying inputs according to a programmed script
C. comparison of expected outcomes with actual outcomes
D. recording test inputs
E. reading test values from a data file

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E. reading test values from a data file

# Modal Questions

- A tool that supports traceability, recording of incidents or scheduling of tests is called:

A. dynamic analysis tool
B. test execution tool
C. debugging tool
D. test management tool
E. configuration management tool

# Modal Questions

- A tool that supports traceability, recording of incidents or scheduling of tests is called:

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B. test execution tool

C. debugging tool

**D. test management tool**

E. configuration management tool

# Modal Questions

- **Which of the following tools would you use to detect a memory leak?**

a. State analysis

b. Coverage analysis

c. Dynamic analysis

d. Memory analysis

# Modal Questions

- **Which of the following tools would you use to detect a memory leak?**

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b. Coverage analysis

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# Modal Questions

- **Which one of the following statements, about capture-replay tools, is NOT correct?**

a) They are used to support multi-user testing.

b) They are used to capture and animate user requirements.

c) They are the most frequently purchased types of CAST tool.

d) They capture aspects of user behavior.

# Modal Questions

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# Modal Questions

- **Which of the following tools would be involved in the automation of regression test?**

a. Data tester

b. Boundary tester

c. Capture/Playback

d. Output comparator.

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