

Introduction to Software Testing



CERTIFICATE OF ACHIEVEMENT

This certificate is proudly presented to

Buhle Palaza

> For: **Introduction to Software Testing**

> With a score of: **30/40 (75%)**

> Date: **October 31, 2025**



CAPACITI

Report Summary

Name	: Buhle Palaza
Your Score	: 30 out of 40 (75%)
Correct Answers	: 30 Questions
Incorrect Answers	: 10 Questions
Unanswered	: 0 Questions
Required Passing Grade (%)	: 50%
Time Taken	: 23 mins 31 secs
Date	: Oct 31, 2025
Your Result	: Pass
Email	: buhle.palaza@capaciti.org.za

Your Answers

Correct

- Q1) True or False: Writing good unit tests involves testing each function or method in isolation.
- A. True (Your Answer)(Correct)
 - B. False

Explanation:

Good unit tests should test each function or method in isolation to ensure that they are functioning correctly on their own.

Correct

- Q2) True or False: Test coverage is a metric used to measure the percentage of code that is executed by the tests.
- A. True (Your Answer)(Correct)
 - B. False

Explanation:

Test coverage is a metric used to measure the percentage of code that is executed by the tests, helping to identify areas that may need additional testing.

Incorrect

- Q3) True or False: Boundary value analysis is a black-box testing technique.
- A. True (Correct)
 - B. False (Your Answer)(Incorrect)

Explanation:

Boundary value analysis is a black-box testing technique that focuses on testing boundaries or limits of input values to uncover bugs that may occur at these boundaries.

Correct

- Q4) True or False: Test-driven development (TDD) is a testing technique that involves writing tests after the code is implemented.
- A. True
 - B. False (Your Answer)(Correct)

Explanation:

Test-driven development (TDD) is a software development approach where tests are written before the code is implemented, helping to guide the design and development process.

Incorrect

- Q5) True or False: Smoke testing is a type of testing that focuses on testing the most critical functionalities of the software.
- A. True (Correct)
 - B. False (Your Answer)(Incorrect)

Explanation:

Smoke testing is a type of testing that focuses on testing the most critical functionalities of the software to ensure that the basic functionality of the application is working correctly.

Correct

- Q6) What is the main goal of software testing?
- A. To ensure that the software never has any bugs
 - B. To find bugs and defects in the software (Your Answer)(Correct)
 - C. To slow down the software development process
 - D. To reduce the quality of the software

Explanation:

The main goal of software testing is to find bugs and defects in the software so that they can be fixed before the software is released to users.

Correct

Q7) What is the purpose of unit testing in the software development lifecycle?

- A. To test the entire system at once
- B. To ensure that individual units of code work correctly (Your Answer)(Correct)
- C. To test the software in a production environment
- D. To test the software with real user data

Explanation:

Unit testing is done to ensure that individual units of code work correctly in isolation before they are integrated into the larger system. It helps catch bugs early in the development process.

Correct

Q8) What is regression testing?

- A. Testing the software for bugs in a production environment
- B. Testing the software on a variety of devices
- C. Re-running tests to ensure that previously fixed bugs have not reappeared (Your Answer)(Correct)
- D. Testing the entire system at once

Explanation:

Regression testing involves re-running tests to ensure that previously fixed bugs have not reappeared after new code changes have been made. It helps ensure that new code does not break existing functionality.

Correct

Q9) What is a code review?

- A. Testing the software for bugs in a production environment
- B. Reviewing code written by another developer for errors and optimization opportunities (Your Answer)(Correct)
- C. Testing the software on a variety of devices
- D. Testing the entire system at once

Explanation:

A code review is a process where a developer reviews code written by another developer to check for errors, adhere to coding standards, and identify optimization opportunities. It helps improve code quality and catch bugs early in the development process.

Correct

Q10) What is the purpose of writing test cases?

- A. To slow down the software development process
- B. To document how the software should behave under specific conditions (Your Answer)(Correct)
- C. To delay the release of the software
- D. To reduce the quality of the software

Explanation:

Writing test cases helps document how the software should behave under specific conditions. Test cases help ensure that the software meets the requirements and functions correctly.

Correct

Q11) What is black box testing?

- A. Testing the software at the code level
- B. Testing the software without knowledge of its internal code structure (Your Answer)(Correct)
- C. Testing the entire system at once
- D. Testing the user interface of the software

Explanation:

Black box testing is a testing technique where the tester tests the software without knowledge of its internal code structure. It focuses on testing the software's functionality and behavior from an end-user perspective.

Correct

Q12) What is a test plan?

- A. A plan that outlines the testing approach for a software project (Your Answer)(Correct)
- B. A plan that outlines the development approach for a software project
- C. A plan that outlines the marketing strategy for a software project
- D. A plan that outlines the deployment strategy for a software project

Explanation:

A test plan is a document that outlines the testing approach, objectives, resources, schedule, and scope for a software project. It helps ensure that testing is conducted systematically and thoroughly throughout the project.

Correct

Q13) What is exploratory testing?

- A. Testing the software based on a predefined set of test cases
- B. Testing the software without a predefined test plan (Your Answer)(Correct)
- C. Testing the entire system at once
- D. Testing the software on a variety of devices

Explanation:

Exploratory testing is an approach to testing where the tester explores the software without a predefined test plan. It is often used to discover bugs that may not be found by following a scripted test case.

Incorrect

Q14) What is the purpose of smoke testing?

- A. To test the software for major bugs before more in-depth testing (Correct)
- B. To test the software in a production environment
- C. To test the software with real user data
- D. To test the software by running all test cases sequentially (Your Answer)(Incorrect)

Explanation:

Smoke testing is a type of testing that aims to test the software for major bugs before more in-depth testing is carried out. It is usually done to ensure that the software is stable enough for further testing.

Correct

Q15) What is the V-model of software testing?

- A. A testing model that is shaped like the letter V
- B. A model that shows the relationship between each phase of the testing process and its corresponding development phase (Your Answer)(Correct)
- C. A model that focuses only on black box testing
- D. A model that focuses only on white box testing

Explanation:

The V-model of software testing is a model that shows the relationship between each phase of the testing process and its corresponding development phase. It emphasizes the importance of testing throughout the software development lifecycle to ensure quality.

Correct

Q16) What is the purpose of software testing in the software development lifecycle?

- A. To ensure the software meets the customer's requirements
- B. To identify bugs and defects in the software
- C. To improve the quality of the software
- D. All of the above (Your Answer)(Correct)

Explanation:

Software testing helps ensure that the software meets the customer's requirements, identifies bugs and defects, and improves the quality of the software.

Correct

Q17) What is the primary goal of writing good unit tests?

- A. To test the entire software system
- B. To identify bugs in the code
- C. To verify the functionality of individual units of code (Your Answer)(Correct)
- D. To test the user interface of the software

Explanation:

Writing good unit tests involves verifying the functionality of individual units of code, helping to ensure that each unit works correctly in isolation.

Incorrect

- Q18) What is one benefit of incorporating testing early in the software development lifecycle?
- A. Reduced development time
 - B. Improved software quality (Your Answer)(Incorrect)
 - C. Increased customer satisfaction
 - D. All of the above (Correct)

Explanation:

Incorporating testing early in the software development lifecycle can help reduce development time, improve software quality, and increase customer satisfaction by catching issues sooner.

Correct

- Q19) Which of the following is NOT a common software testing technique?
- A. Black box testing
 - B. White box testing
 - C. Gray box testing
 - D. Red box testing (Your Answer)(Correct)

Explanation:

Red box testing is not a common software testing technique. Black box, white box, and gray box testing are commonly used approaches.

Correct

- Q20) What is the correct way to represent a string value in JSON?
- A. Quotes are not necessary for string values
 - B. Using single quotes for string values
 - C. Using double quotes for string values (Your Answer)(Correct)
 - D. Using square brackets for string values

Explanation:

In JSON, string values must be enclosed in double quotes to be considered valid syntax. Single

quotes or no quotes will result in a syntax error when parsing the data.

Incorrect

Q21) What is the correct syntax of a JSON response?

- A. Key value pairs separated by commas and surrounded by curly braces {}
- B. Arrays of data separated by commas and surrounded by square brackets [] (Your Answer)(Incorrect)
- C. Both A and B (Correct)
- D. None of the above

Explanation:

The correct syntax of a JSON response consists of key value pairs separated by commas and surrounded by curly braces {}, and arrays of data separated by commas and surrounded by square brackets []. Therefore, the correct answer is option C - Both A and B.

Correct

Q22) Which phase of the software development lifecycle does software testing typically occur in?

- A. Requirements gathering
- B. Design
- C. Testing (Your Answer)(Correct)
- D. Maintenance

Explanation:

Software testing typically occurs during the testing phase of the software development lifecycle to ensure the software meets the requirements and is free of defects.

Correct

Q23) What is the purpose of writing good unit tests?

- A. To increase the code complexity
- B. To slow down the development process
- C. To validate the functionality of individual units of code (Your Answer)(Correct)
- D. To make the code less maintainable

Explanation:

Writing good unit tests helps validate the functionality of individual units of code, ensuring they work as expected and making it easier to catch and fix bugs.

Correct

Q24) What is the purpose of RFC8259?

- A. Defining the format of JSON data
- B. Specifying the rules for data interchange using JSON (Your Answer)(Correct)
- C. Defining the structure of a JSON file
- D. Explaining the benefits of using JSON

Explanation:

RFC8259 specifies the rules for how data can be exchanged between systems using JSON, including the syntax rules and encoding.

Correct

Q25) Which of the following is not a commonly used software testing technique?

- A. Black box testing
- B. White box testing
- C. Random testing
- D. Green box testing (Your Answer)(Correct)

Explanation:

Green box testing is not a commonly used software testing technique. Black box, white box, and random testing are more widely used.

Correct

Q26) Which data interchange format is defined in RFC8259?

- A. XML
- B. JSON (Your Answer)(Correct)

- C. CSV
- D. YAML

Explanation:

The correct answer is B: JSON. JSON (JavaScript Object Notation) is a lightweight data interchange format defined in RFC8259. XML, CSV, and YAML are other data interchange formats but they are not defined in RFC8259.

Incorrect

Q27) Which of the following is an example of a software testing tool?

- A. Microsoft Word
- B. Eclipse IDE (Your Answer)(Incorrect)
- C. JIRA (Correct)
- D. Google Chrome

Explanation:

JIRA is an example of a software testing tool commonly used for issue tracking and project management in software development.

Correct

Q28) What does RFC8259 define?

- A. Data interchange format (Your Answer)(Correct)
- B. Networking protocol
- C. Database management system
- D. Web server technology

Explanation:

RFC8259 defines the JSON (JavaScript Object Notation) data interchange format, which is used for transmitting data between a server and a web application.

Correct

Q29) What does RFC8259 define?

- A. XML
- B. JSON (Your Answer)(Correct)
- C. HTML
- D. CSS

Explanation:

RFC8259 defines the JavaScript Object Notation (JSON) data interchange format. JSON is a lightweight data-interchange format that is easy for humans to read and write, and easy for machines to parse and generate. It is based on a subset of the JavaScript programming language.

Incorrect

Q30) What is the correct value type for a JSON key-value pair?

- A. String (Correct)
- B. Integer
- C. Boolean
- D. Array (Your Answer)(Incorrect)

Explanation:

In JSON, key-value pairs are represented as strings, where the key is always a string enclosed in double quotes.

Incorrect

Q31) What is the correct way to represent a key-value pair in JSON?

- A. key: value (Your Answer)(Incorrect)
- B. key = value
- C. key -> value
- D. key: value (Correct)

Explanation:

In JSON, a key-value pair is represented using a colon (:) between the key and the value. Option D is the correct way to represent a key-value pair in JSON.

Correct

Q32) Which testing technique focuses on the internal logic of the code?

- A. Black-box testing
- B. White-box testing (Your Answer)(Correct)
- C. Grey-box testing
- D. Acceptance testing

Explanation:

White-box testing is a testing technique that focuses on the internal logic, code structure, and implementation details of software applications.

Incorrect

Q33) Which type of testing is also known as structural or glass-box testing?

- A. Black-box testing
- B. White-box testing (Correct)
- C. System testing (Your Answer)(Incorrect)
- D. Integration testing

Explanation:

White-box testing is also known as structural or glass-box testing as it involves testing internal code structure and logic.

Correct

Q34) In white-box testing, what is tested?

- A. Only the user interface
- B. Internal code structure and logic (Your Answer)(Correct)
- C. Requirements documentation
- D. Performance of the system

Explanation:

White-box testing involves testing the internal code structure, logic, paths, and conditions based on the code analysis.

Incorrect

Q35) Which testing technique is more suitable for validating external behavior against documented requirements?

- A. Black-box testing (Correct)
- B. White-box testing
- C. Grey-box testing
- D. Acceptance testing (Your Answer)(Incorrect)

Explanation:

Black-box testing is more suitable for validating external behavior based on requirements without any knowledge of internal code structure.

Correct

Q36) What is a primary focus of requirements-based testing?

- A. Testing based on internal code structure
- B. Testing without requirements documentation
- C. Testing based on user interface only
- D. Testing based on documented requirements (Your Answer)(Correct)

Explanation:

Requirements-based testing focuses on testing software functionality based on documented requirements to ensure that the software meets the specified criteria.

Correct

Q37) Which testing technique is used to verify the correct implementation of individual units or components?

- A. Black-box testing
- B. White-box testing
- C. Unit testing (Your Answer)(Correct)
- D. System testing

Explanation:

Unit testing is a type of white-box testing that is used to validate the correct implementation of individual units or components of a software application.

Correct

- Q38) Which tool can be used for performing behavior-driven development (BDD) with cucumber?
- A. Postman
 - B. Selenium
 - C. Jenkins
 - D. Cucumber (Your Answer)(Correct)

Explanation:

Cucumber is a popular tool used for behavior-driven development (BDD) testing, allowing users to write test cases in plain language using the Gherkin syntax.

Correct

- Q39) What is the purpose of using cucumber in software testing?
- A. To write complex algorithms in test scripts
 - B. To automate user interface testing
 - C. To perform behavior-driven development (BDD) testing (Your Answer)(Correct)
 - D. To generate random test data

Explanation:

Cucumber is used to facilitate behavior-driven development (BDD) testing by allowing stakeholders to write test cases in plain language that can be easily understood by non-technical users.

Correct

- Q40) Which standard governs the serialization format of JSON?
- A. RFC8259 (Your Answer)(Correct)
 - B. HTML5
 - C. SQL
 - D. XML

Explanation:

JSON (JavaScript Object Notation) serialization format is governed by the RFC8259 standard, which defines the syntax and data types allowed in JSON documents.