# 45 intermediate to advanced level difficulty MCQs

Multiple Choice Question 1

Which block in Java ensures execution regardless of whether an exception is thrown?

Options:

A. try

B. catch

C. finally

D. throw

Skill: Java Exception Handling

Subskill: try-catch-finally

Competency: Ensure cleanup with finally block

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

The `finally` block always executes after `try` and `catch`, ensuring resource cleanup.

• Incorrect Options Feedback:

o A. `try` may not complete if an exception occurs.

o B. `catch` only runs if an exception is thrown.

o D. `throw` is used to explicitly throw an exception.

---

Multiple Choice Question 2

Which keyword is used to declare that a method might throw an exception?

Options:

A. throw

B. throws

C. catch

D. final

Skill: Java Exception Handling

Subskill: throw/throws

Competency: Declare exceptions in method signature

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

`throws` is used in method declarations to indicate potential exceptions.

• Incorrect Options Feedback:

o A. `throw` is used to actually throw an exception.

o C. `catch` handles exceptions.

o D. `final` prevents method overriding.

---

Multiple Choice Question 3

Which of the following is true about custom exceptions in Java?

Options:

A. They must extend java.lang.Exception or its subclasses

B. They must override the toString() method

C. They cannot have constructors

D. They must be abstract classes

Skill: Java Exception Handling

Subskill: Custom Exceptions

Competency: Create and use custom exception classes

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Custom exceptions are typically created by extending `Exception` or `RuntimeException`.

• Incorrect Options Feedback:

o B. Overriding `toString()` is optional.

o C. Constructors can be defined as needed.

o D. They do not need to be abstract.

---

Multiple Choice Question 4

Which debugging feature allows monitoring variable values during execution?

Options:

A. Breakpoint

B. Watch

C. Stack trace

D. Step over

Skill: Debugging

Subskill: Watch Variables

Competency: Monitor variable state during debugging

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

A watch allows observing the value of a variable as the program executes.

• Incorrect Options Feedback:

o A. Breakpoints pause execution.

o C. Stack trace shows the call stack.

o D. Step over executes the current line.

---

Multiple Choice Question 5

Which Java logging framework is part of the standard Java library?

Options:

A. Log4j

B. SLF4J

C. java.util.logging

D. Apache Commons Logging

Skill: Logging

Subskill: java.util.logging

Competency: Use built-in logging framework

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`java.util.logging` is included in the Java standard library for logging.

• Incorrect Options Feedback:

o A. Log4j is an external library.

o B. SLF4J is a logging facade.

o D. Apache Commons Logging is also external.

---

Multiple Choice Question 6

Which Log4j level is used to log error events that might still allow the application to continue?

Options:

A. FATAL

B. ERROR

C. WARN

D. DEBUG

Skill: Logging

Subskill: Log4j

Competency: Use appropriate logging levels

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`ERROR` logs serious issues that may allow the application to continue running.

• Incorrect Options Feedback:

o A. `FATAL` indicates severe errors that lead to termination.

o C. `WARN` is for potentially harmful situations.

o D. `DEBUG` is for detailed debugging information.

---

Multiple Choice Question 7

Which JDBC class is used to execute a SELECT query?

Options:

A. Connection

B. Statement

C. ResultSet

D. DriverManager

Skill: JDBC

Subskill: SELECT query execution

Competency: Execute SQL queries using JDBC

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

The `Statement` object is used to execute SQL queries like SELECT.

• Incorrect Options Feedback:

o A. `Connection` establishes a connection.

o C. `ResultSet` holds query results.

o D. `DriverManager` manages JDBC drivers.

---

Multiple Choice Question 8

Which method is used to establish a JDBC connection?

Options:

A. DriverManager.getConnection()

B. Connection.open()

C. Statement.connect()

D. ResultSet.getConnection()

Skill: JDBC

Subskill: Connecting to DB

Competency: Establish database connection

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`DriverManager.getConnection()` is used to establish a JDBC connection.

• Incorrect Options Feedback:

o B. `Connection.open()` does not exist.

o C. `Statement` does not connect to DB.

o D. `ResultSet` is for query results.

---

Multiple Choice Question 9

Which Java class is used to read text from a file line by line?

Options:

A. File

B. FileWriter

C. BufferedReader

D. Scanner

Skill: File Handling

Subskill: Reading Text Files

Competency: Read data from files

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`BufferedReader` provides efficient reading of characters, arrays, and lines.

• Incorrect Options Feedback:

o A. `File` represents file pathnames.

o B. `FileWriter` is used for writing.

o D. `Scanner` can read files but is less efficient.

---

Multiple Choice Question 10

Which class is used to write text to a file in Java?

Options:

A. FileReader

B. FileInputStream

C. FileWriter

D. BufferedReader

Skill: File Handling

Subskill: Writing Text Files

Competency: Write data to files

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`FileWriter` is used to write character data to files.

• Incorrect Options Feedback:

o A. `FileReader` reads character data.

o B. `FileInputStream` reads binary data.

o D. `BufferedReader` reads text.

---

Multiple Choice Question 11

Which library is commonly used in Java to read and write Excel files?

Options:

A. Apache POI

B. iText

C. OpenCSV

D. JFreeChart

Skill: File Handling

Subskill: Working with Excel

Competency: Read/write Excel files

Difficulty Level: Advanced

Bloom Level: Application

• Correct Answer Reason:

Apache POI is a Java library for reading and writing Microsoft Office documents.

• Incorrect Options Feedback:

o B. iText is used for PDFs.

o C. OpenCSV is for CSV files.

o D. JFreeChart is for charts.

---

Multiple Choice Question 12

Which Apache POI class is used to access Excel sheets?

Options:

A. XSSFWorkbook

B. XSSFSheet

C. XSSFRow

D. XSSFCell

Skill: File Handling

Subskill: Working with Excel

Competency: Access Excel sheets

Difficulty Level: Advanced

Bloom Level: Application

• Correct Answer Reason:

`XSSFSheet` represents an Excel sheet in Apache POI.

• Incorrect Options Feedback:

o A. `XSSFWorkbook` represents the entire workbook.

o C. `XSSFRow` represents a row.

o D. `XSSFCell` represents a cell.

---

Multiple Choice Question 13

Which library is commonly used to generate PDF files in Java?

Options:

A. Apache POI

B. iText

C. OpenCSV

D. PDFBox

Skill: File Handling

Subskill: Working with PDF

Competency: Generate PDF files

Difficulty Level: Advanced

Bloom Level: Application

• Correct Answer Reason:

iText is a popular library for creating and manipulating PDF documents.

• Incorrect Options Feedback:

o A. Apache POI is for Excel/Word.

o C. OpenCSV is for CSV files.

o D. PDFBox is also used but less commonly than iText.

---

Multiple Choice Question 14

Which method in iText is used to add a paragraph to a PDF document?

Options:

A. addText()

B. write()

C. add()

D. insert()

Skill: File Handling

Subskill: Working with PDF

Competency: Add content to PDF

Difficulty Level: Advanced

Bloom Level: Application

• Correct Answer Reason:

The `add()` method is used to add elements like Paragraph to a Document in iText.

• Incorrect Options Feedback:

o A. `addText()` is not a valid method.

o B. `write()` is not used in this context.

o D. `insert()` is not applicable.

---

Multiple Choice Question 15

When debugging a Java program, which action allows you to execute the current line of code and move to the next without stepping into method calls?

Options:

A. Step Into

B. Step Over

C. Step Return

D. Resume

Skill: Debugging

Subskill: Breakpoints & Execution Control

Competency: Control program flow during debugging

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

`Step Over` executes the current line and moves to the next, skipping over method internals.

• Incorrect Options Feedback:

o A. `Step Into` goes inside method calls.

o C. `Step Return` runs until the current method returns.

o D. `Resume` continues execution until the next breakpoint.

---

Multiple Choice Question 16

Why is software testing considered essential in the software development lifecycle?

Options:

A. To increase development time

B. To ensure software meets requirements and is defect-free

C. To reduce the number of developers

D. To delay product release

Skill: Software Testing Fundamentals

Subskill: Importance of Testing

Competency: Understand the role of testing in quality assurance

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

Testing ensures that the software meets business and technical requirements and functions correctly without defects.

• Incorrect Options Feedback:

o A. Testing aims to reduce development time by catching issues early.

o C. Testing does not affect team size.

o D. Testing helps avoid delays by identifying issues early.

---

Multiple Choice Question 17

Which statement best describes the difference between QA and QC?

Options:

A. QA is product-oriented; QC is process-oriented

B. QA is process-oriented; QC is product-oriented

C. QA is optional; QC is mandatory

D. QA is done after development; QC is done before

Skill: Software Testing

Subskill: QA vs QC

Competency: Differentiate QA and QC roles

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

QA focuses on improving processes to prevent defects; QC focuses on identifying defects in the final product.

• Incorrect Options Feedback:

o A. This reverses the correct roles.

o C. Both QA and QC are essential.

o D. QA and QC can occur throughout the lifecycle.

---

Multiple Choice Question 18

What is the primary role of a software tester?

Options:

A. Writing production code

B. Designing system architecture

C. Identifying defects and validating requirements

D. Managing project timelines

Skill: Software Testing

Subskill: Role of Tester

Competency: Understand tester responsibilities

Difficulty Level: Intermediate

Bloom Level: Knowledge

• Correct Answer Reason:

Testers identify defects and ensure the software meets specified requirements.

• Incorrect Options Feedback:

o A. Developers write production code.

o B. Architects design system architecture.

o D. Project managers handle timelines.

---

Multiple Choice Question 19

In which phase of SDLC does testing typically begin?

Options:

A. Requirements gathering

B. Design

C. After implementation

D. Maintenance

Skill: SDLC

Subskill: Testing in SDLC

Competency: Identify testing phase

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

Testing begins after implementation, during the testing phase of SDLC.

• Incorrect Options Feedback:

o A. Requirements gathering is too early.

o B. Design focuses on architecture.

o D. Maintenance involves post-release support.

---

Multiple Choice Question 20

Which STLC phase involves creating test cases and test data?

Options:

A. Test Planning

B. Test Case Development

C. Test Execution

D. Test Closure

Skill: STLC

Subskill: STLC Phases

Competency: Understand test case development

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Test Case Development includes designing test cases and preparing test data.

• Incorrect Options Feedback:

o A. Test Planning defines scope and strategy.

o C. Test Execution runs the test cases.

o D. Test Closure involves reporting and analysis.

---

Multiple Choice Question 21

Which test level verifies the complete system against requirements?

Options:

A. Unit Testing

B. Integration Testing

C. System Testing

D. UAT

Skill: Test Levels

Subskill: System Testing

Competency: Validate system functionality

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

System testing validates the entire system against specified requirements.

• Incorrect Options Feedback:

o A. Unit testing checks individual components.

o B. Integration testing checks interactions.

o D. UAT is performed by end users.

---

Multiple Choice Question 22

Which of the following is a non-functional test type?

Options:

A. Regression Testing

B. Load Testing

C. Smoke Testing

D. Sanity Testing

Skill: Test Types

Subskill: Non-functional Testing

Competency: Identify non-functional tests

Difficulty Level: Intermediate

Bloom Level: Knowledge

• Correct Answer Reason:

Load testing evaluates system performance under expected load conditions.

• Incorrect Options Feedback:

o A. Regression testing is functional.

o C. Smoke testing is functional.

o D. Sanity testing is functional.

---

Multiple Choice Question 23

Which static testing technique involves a formal examination of documents?

Options:

A. Walkthrough

B. Inspection

C. Review

D. Debugging

Skill: Static Testing

Subskill: Inspections

Competency: Apply formal review techniques

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Inspection is a formal static testing technique involving detailed document examination.

• Incorrect Options Feedback:

o A. Walkthroughs are informal.

o C. Reviews may be informal or formal.

o D. Debugging is dynamic testing.

---

Multiple Choice Question 24

Which technique is used to design test cases based on input partitions?

Options:

A. Boundary Value Analysis

B. Equivalence Partitioning

C. Exploratory Testing

D. Regression Testing

Skill: Test Design

Subskill: Equivalence Partitioning

Competency: Design efficient test cases

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Equivalence Partitioning divides input data into valid and invalid partitions to reduce test cases.

• Incorrect Options Feedback:

o A. Boundary Value Analysis focuses on edge values.

o C. Exploratory testing is unscripted.

o D. Regression testing checks for reintroduced defects.

---

Multiple Choice Question 25

Which is a valid negative test case for a login form?

Options:

A. Enter valid username and password

B. Leave both fields blank and click login

C. Use correct credentials and click login

D. Use remembered credentials

Skill: Test Design

Subskill: Negative Test Case Design

Competency: Validate system behavior for invalid inputs

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Leaving both fields blank tests how the system handles missing input, a negative scenario.

• Incorrect Options Feedback:

o A. This is a positive test case.

o C. Also a positive test case.

o D. Not a negative scenario.

---

Multiple Choice Question 26

What is the goal of exploratory testing?

Options:

A. To execute predefined test cases

B. To automate regression tests

C. To discover defects through unscripted testing

D. To validate performance metrics

Skill: Exploratory Testing

Subskill: Basics

Competency: Discover defects through exploration

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Exploratory testing involves simultaneous learning and test design to uncover defects.

• Incorrect Options Feedback:

o A. Predefined tests are scripted.

o B. Automation is unrelated.

o D. Performance testing is non-functional.

---

Multiple Choice Question 27

Which field is essential when logging a defect?

Options:

A. Developer name

B. Expected result

C. Test plan ID

D. Build version

Skill: Defect Reporting

Subskill: Logging Bugs

Competency: Report defects accurately

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Expected result helps clarify what the system should have done, aiding defect resolution.

• Incorrect Options Feedback:

o A. Developer name is not mandatory.

o C. Test plan ID is not directly relevant.

o D. Build version is useful but not essential.

---

Multiple Choice Question 28

In the HTML DOM, what is a node?

Options:

A. A CSS selector

B. A JavaScript function

C. An object representing part of the document

D. A browser plugin

Skill: HTML DOM

Subskill: Tree Structure

Competency: Understand DOM hierarchy

Difficulty Level: Intermediate

Bloom Level: Knowledge

• Correct Answer Reason:

A node is an object representing elements, attributes, or text in the document tree.

• Incorrect Options Feedback:

o A. CSS selectors are used for styling.

o B. JavaScript functions manipulate nodes.

o D. Plugins are unrelated.

---

Multiple Choice Question 29

Which browser tool allows copying an element’s XPath?

Options:

A. Console

B. Network tab

C. Elements tab

D. Sources tab

Skill: Browser Developer Tools

Subskill: Inspecting Elements

Competency: Locate and copy element paths

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

The Elements tab allows inspection and copying of XPath or CSS selectors.

• Incorrect Options Feedback:

o A. Console is for executing scripts.

o B. Network tab monitors requests.

o D. Sources tab shows source files.

---

Multiple Choice Question 30

Which XPath expression selects all `<div>` elements with class 'header'?

Options:

A. `//div[@class='header']`

B. `div.class='header'`

C. `//div.class='header'`

D. `//div[@header]`

Skill: XPath

Subskill: Attribute Selection

Competency: Use XPath to locate elements by attribute

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

The XPath `//div[@class='header']` selects all `<div>` elements where the class attribute equals 'header'.

• Incorrect Options Feedback:

o B. `div.class='header'` is not valid XPath syntax.

o C. `//div.class='header'` is incorrect syntax.

o D. `//div[@header]` selects `<div>` elements with a `header` attribute, not a class.

---

Multiple Choice Question 31

Which statement best differentiates black-box from white-box testing in dynamic test design?

Options:

A. Black-box focuses on code paths; white-box focuses on user workflows

B. Black-box validates external behavior; white-box validates internal logic and paths

C. Black-box requires source access; white-box does not

D. Black-box cannot be automated; white-box always is

Skill: Test design

Subskill: Black-box vs white-box

Competency: Select appropriate dynamic testing approach

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

Black-box testing validates behavior against requirements without internal knowledge, while white-box uses code structure, paths, and conditions.

• Incorrect Options Feedback:

o A. Reversed: code paths are white-box.

o C. Black-box does not require source; white-box typically does.

o D. Both can be automated depending on context.

---

Multiple Choice Question 32

Which artifact defines the overall approach, scope, risks, and entry/exit criteria for testing?

Options:

A. Test Plan

B. Test Strategy

C. Test Scenario

D. Test Case

Skill: Test artifacts

Subskill: Strategy vs plan

Competency: Craft and interpret test documentation

Difficulty Level: Advanced

Bloom Level: Analysis

• Correct Answer Reason:

A Test Strategy is a high-level document covering approach, scope, risks, and criteria across projects or releases.

• Incorrect Options Feedback:

o A. Test Plan operationalizes the strategy for a specific project.

o C. Scenario describes a user flow to be tested.

o D. Test Case details steps, data, and expected results.

---

Multiple Choice Question 33

Which option best defines a test case?

Options:

A. A list of defects found during testing

B. A document outlining overall test objectives

C. A set of steps, inputs, and expected outcomes to validate a requirement

D. A description of system architecture

Skill: Test case fundamentals

Subskill: Definition

Competency: Identify and create test cases

Difficulty Level: Intermediate

Bloom Level: Knowledge

• Correct Answer Reason:

A test case specifies steps, input data, preconditions, and expected results to verify a requirement or feature.

• Incorrect Options Feedback:

o A. That is a defect report.

o B. That is a test plan.

o D. Architecture is unrelated to test case definition.

---

Multiple Choice Question 34

Which key component is NOT typically mandatory in a test case?

Options:

A. Unique ID

B. Preconditions

C. Actual results

D. Project charter

Skill: Test case components

Subskill: Structure

Competency: Assemble test case elements

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

A project charter is not part of a test case; test cases include ID, steps, data, expected/actual results, and preconditions.

• Incorrect Options Feedback:

o A. IDs ensure traceability.

o B. Preconditions define test setup.

o C. Actual results are needed for pass/fail.

---

Multiple Choice Question 35

Which statement accurately distinguishes test plan, test scenario, and test case?

Options:

A. Plan = steps; Scenario = coverage; Case = strategy

B. Plan = strategy; Scenario = user flow; Case = executable steps

C. Plan = defects; Scenario = inputs; Case = requirements

D. Plan = code; Scenario = API; Case = UI

Skill: Test artifacts

Subskill: Plan vs scenario vs case

Competency: Map artifacts to testing levels

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

Test Plan defines strategy; Test Scenario describes end-to-end flow; Test Case provides detailed, executable steps.

• Incorrect Options Feedback:

o A. Confuses plan and case.

o C. Incorrect mapping.

o D. Not artifact definitions.

---

Multiple Choice Question 36

Which practice most directly improves test case clarity and traceability?

Options:

A. Using vague steps to cover multiple paths

B. Mapping each test case to unique requirement IDs

C. Omitting expected results to avoid bias

D. Combining multiple scenarios into a single case

Skill: Test case writing

Subskill: Clarity and traceability

Competency: Produce maintainable test assets

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Requirement-to-test case mapping ensures traceability and coverage, improving clarity for stakeholders.

• Incorrect Options Feedback:

o A. Vague steps reduce clarity.

o C. Expected results are essential.

o D. Combining scenarios harms isolation and traceability.

---

Multiple Choice Question 37

Which deliverable is typically produced during test review and reporting?

Options:

A. Bug triage meeting notes

B. Test execution summary with pass/fail metrics

C. Build deployment checklist

D. Architecture decision record

Skill: Review & reporting

Subskill: Test reporting artifacts

Competency: Communicate test outcomes

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

A test execution summary consolidates metrics, defects, risks, and coverage for stakeholders.

• Incorrect Options Feedback:

o A. Triage notes are helpful but not the primary reporting deliverable.

o C. Deployment checklist is DevOps-focused.

o D. ADRs are architecture artifacts.

---

Multiple Choice Question 38

Which statement best defines positive vs negative test scenarios?

Options:

A. Positive: invalid inputs; Negative: valid inputs

B. Positive: expected valid workflows; Negative: invalid inputs and error handling

C. Positive: performance tests; Negative: security tests

D. Positive: UI tests; Negative: API tests

Skill: Scenario design

Subskill: Positive vs negative

Competency: Balance validation and robustness testing

Difficulty Level: Intermediate

Bloom Level: Comprehension

• Correct Answer Reason:

Positive scenarios verify valid workflows; negative scenarios validate error handling for invalid inputs or states.

• Incorrect Options Feedback:

o A. Reversed.

o C. Test type mapping is incorrect.

o D. Not related to positive/negative classification.

---

Multiple Choice Question 39

Which technique pairs best with Equivalence Partitioning to minimize test cases while finding edge defects?

Options:

A. Decision table testing

B. Boundary Value Analysis

C. State transition testing

D. Mutation testing

Skill: Test design

Subskill: EP & BVA

Competency: Optimize coverage with minimal cases

Difficulty Level: Advanced

Bloom Level: Analysis

• Correct Answer Reason:

Boundary Value Analysis complements EP by testing boundaries of partitions where defects often occur.

• Incorrect Options Feedback:

o A. Useful but not directly about boundaries.

o C. State transitions focus on state changes.

o D. Mutation testing assesses test effectiveness, not input boundaries.

---

Multiple Choice Question 40

Which is a robust negative test case for registration?

Options:

A. Valid email and strong password

B. Email without '@' and password '123'

C. Matching password and confirm password

D. Pre-filled valid user data

Skill: Scenario design

Subskill: Login/registration negative cases

Competency: Validate input constraints and error handling

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Invalid email format combined with weak password checks field validation and error messaging.

• Incorrect Options Feedback:

o A. Positive case.

o C. Positive case.

o D. Positive case.

---

Multiple Choice Question 41

Which approach defines exploratory testing most accurately?

Options:

A. Scripted execution only

B. Simultaneous learning, test design, and execution guided by charters

C. Ad-hoc random clicking without notes

D. Pure automation of predefined cases

Skill: Exploratory testing

Subskill: Fundamentals

Competency: Structure effective exploratory sessions

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Exploratory testing is structured by charters, combining learning, design, and execution, with session notes.

• Incorrect Options Feedback:

o A. Scripted is not exploratory.

o C. Ad-hoc lacks structure and documentation.

o D. Automation is unrelated to exploration.

---

Multiple Choice Question 42

Which fields are most critical when logging a defect from a failed negative test?

Options:

A. Developer phone number, team name

B. Steps to reproduce, environment, expected vs actual results

C. Source code snippet, repository URL

D. Product roadmap, OKRs

Skill: Defect reporting

Subskill: Bug logging essentials

Competency: Create actionable defect reports

Difficulty Level: Intermediate

Bloom Level: Application

• Correct Answer Reason:

Detailed reproduction steps, environment, and expected vs actual outcomes make defects actionable and reproducible.

• Incorrect Options Feedback:

o A. Not necessary for resolution.

o C. Code snippets may be helpful but are not core fields.

o D. Roadmaps and OKRs are unrelated.

---

Multiple Choice Question 43

In the HTML DOM, which nodes are valid children of an element node?

Options:

A. Only element nodes

B. Element, text, and comment nodes

C. Only attribute nodes

D. Only text nodes

Skill: HTML DOM

Subskill: Tree structure and nodes

Competency: Understand DOM composition

Difficulty Level: Intermediate

Bloom Level: Knowledge

• Correct Answer Reason:

Element nodes can contain element, text, and comment nodes (attributes are associated, not children).

• Incorrect Options Feedback:

o A. Text and comments are also valid.

o C. Attributes are properties, not child nodes.

o D. Elements can contain elements as well.

---

Multiple Choice Question 44

Which locator is most resilient if IDs are dynamic and classes are shared?

Options:

A. ID

B. name

C. linkText

D. CSS selector with attribute and hierarchy (e.g., `div[data-role='login'] > form input[name='email']`)

Skill: Locators

Subskill: Choosing robust locators

Competency: Create maintainable selectors

Difficulty Level: Advanced

Bloom Level: Analysis

• Correct Answer Reason:

Composed CSS selectors using stable attributes and structure are resilient when IDs change and classes are generic.

• Incorrect Options Feedback:

o A. Dynamic IDs are brittle.

o B. name may not be unique.

o C. linkText applies to anchors only and is language-dependent.

---

Multiple Choice Question 45

Which XPath best selects the second child button inside a form with id 'signup'?

Options:

A. `//form[@id='signup']/button[2]`

B. `/form[@id='signup']//button[2]`

C. `//form[@id='signup']//button[position()=2]`

D. `//\*[@id='signup']/child::button[2]`

Skill: XPath

Subskill: Relative vs absolute, axes, attributes

Competency: Target elements precisely with XPath

Difficulty Level: Advanced

Bloom Level: Application

• Correct Answer Reason:

`//form[@id='signup']/button[2]` selects the second direct child button; it’s concise and correct for direct children.

• Incorrect Options Feedback:

o B. Absolute path is incorrect and starts from root; also uses wrong slash semantics.

o C. `//button[position()=2]` would select the second button anywhere under the form, not necessarily a direct child.

o D. Uses axis correctly but is more verbose; still valid, but the question asks for “inside” implying direct children, and D uses `child::` which matches A but is unnecessarily complex.