4. Throwing Exceptions & Catching Multiple Exceptions

V Direct Questions

- 1. Which keyword is used to explicitly throw an exception?
 - a) throws
 - b) catch
 - c) try
 - d) throw
 - **✓** Answer: d
- 2. Which statement is true about multi-catch in Java?
 - a) It only catches checked exceptions
 - b) It can catch multiple exceptions in a single catch block
 - c) It replaces the try block
 - d) It is optional in exception handling
 - 🗸 Answer: b
- 3. Which is valid syntax for multi-catch?
 - a) catch(IOException, SQLException e)
 - b) catch(IOException | SQLException e)
 - c) catch(IOException & SQLException e)
 - d) catch(IOException || SQLException e)
 - **✓** Answer: b

Scenario-Based Questions

- 4. A method throws both IOException and SQLException. How should the caller handle this?
 - a) Use two try blocks
 - b) Ignore them
 - c) Use a multi-catch block
 - d) Handle only IOException
 - **✓** Answer: c
- 5. If one of several exceptions is thrown in a try block, what ensures the correct one is caught?
 - a) Nested try-catch
 - b) Order of catch blocks (from specific to general)
 - c) Using only one catch block
 - d) Skipping exception types
 - **✓** Answer: b

5. Finally Block



1. When is the finally block executed?

- a) Only on exception
- b) Only on no exception
- c) Always
- d) Never
- Answer: c

2. What is the purpose of finally?

- a) Throw an exception
- b) Skip the error
- c) Clean-up resources
- d) Catch the error
- **✓** Answer: c

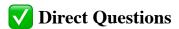
3. Can a program have a try block without a finally or catch?

- a) No
- b) Yes, only if finally is used
- c) Yes, if catch is there
- d) Only for unchecked exceptions
- **Answer:** b

Scenario-Based Questions

- 4. Your code opens a file stream. Where should the close() method be written?
 - a) try block
 - b) catch block
 - c) throw block
 - d) finally block
 - **✓** Answer: d
- 5. If both catch and finally contain return statements, which one is executed?
 - a) catch
 - b) none
 - c) finally
 - d) try
 - Answer: c

6. Custom Exceptions



1. How do you define a custom exception?

- a) class MyException implements Exception
- b) class MyException extends Exception
- c) class MyException extends Throwable

d) class MyException implements Throwable

✓ Answer: b

2. What must a custom exception include?

- a) A main method
- b) A constructor
- c) static block
- d) finalize method

🚺 Answer: b

3. Custom exceptions are typically used for:

- a) Compilation errors
- b) Runtime exceptions
- c) Application-specific errors
- d) JVM errors

✓ Answer: c

Scenario-Based Questions

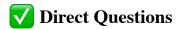
- 4. Your application needs to raise an error when the balance is negative. What should you do?
 - a) throw ArithmeticException
 - b) Create a custom NegativeBalanceException
 - c) Use RuntimeException
 - d) Ignore it

✓ Answer: b

- 5. You want to log all user-related validation errors. What's the best way?
 - a) Use try-catch
 - b) Create UserValidationException
 - c) Throw NullPointerException
 - d) Handle with finally

✓ Answer: b

7. Concurrency



- 1. Which interface must be implemented for multithreading?
 - a) Serializable
 - b) Runnable
 - c) Comparable
 - d) Cloneable
 - **✓** Answer: b
- 2. What does the synchronized keyword do?
 - a) Speeds up thread execution

- b) Ensures only one thread can access a resource
- c) Removes deadlocks
- d) Starts new thread
- **✓** Answer: b
- 3. What method starts a thread in Java?
 - a) run()
 - b) execute()
 - c) start()
 - d) init()
 - **✓** Answer: c

Scenario-Based Questions

- 4. Two threads try to update the same bank account. How do you prevent inconsistency?
 - a) Use run()
 - b) start()
 - c) Use synchronized block
 - d) Use throw
 - **✓** Answer: c
- 5. What happens if run() is called instead of start()?
 - a) Thread runs in parallel
 - b) Thread runs like a normal method (no concurrency)
 - c) JVM throws error
 - d) Thread is created twice
 - **✓** Answer: b

8. File I/O

V Direct Questions

- 1. Which class is used to write to a file in Java?
 - a) Scanner
 - b) FileReader
 - c) FileWriter
 - d) BufferedReader
 - **✓** Answer: c
- 2. Which package contains File I/O classes?
 - a) java.net
 - b) java.util
 - c) java.sql
 - d) java.io
 - ✓ Answer: d

- 3. Which exception must be handled during file operations?
 - a) ArithmeticException
 - b) NullPointerException
 - c) IOException
 - d) ArrayIndexOutOfBoundsException
 - **✓** Answer: c

Scenario-Based Questions

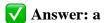
- 4. You want to append text to an existing file. What should you do?
 - a) new FileWriter("file.txt")
 - b) new File("file.txt")
 - c) new FileWriter("file.txt", true)
 - d) use Scanner
 - **✓** Answer: c
- 5. How to ensure resources are closed after reading a file?
 - a) finally block
 - b) catch block
 - c) Use throws
 - d) Try-with-resources
 - **✓** Answer: d

9. SOLID Design Principles

V Direct Questions

- 1. What does the "S" in SOLID stand for?
 - a) Strong typing
 - b) Static class
 - c) Single Responsibility Principle
 - d) Software Abstraction
 - **✓** Answer: c
- 2. Which principle says, "Software entities should be open for extension, but closed for modification"?
 - a) Liskov Substitution
 - b) Dependency Inversion
 - c) Interface Segregation
 - d) Open/Closed Principle
 - **✓** Answer: d
- 3. Which principle encourages using interfaces over concrete classes?
 - a) **Dependency Inversion**
 - b) Interface Segregation
 - c) Liskov Substitution

d) Single Responsibility



Scenario-Based Questions

- 4. A class performs too many tasks: reading input, processing, writing output. Which SOLID principle is violated?
 - a) Liskov Substitution
 - b) Single Responsibility
 - c) Interface Segregation
 - d) Open/Closed
 - **✓** Answer: b
- 5. A function is changed to support new requirements by adding new classes. Existing code is untouched. Which principle is followed?
 - a) Single Responsibility
 - b) Interface Segregation
 - c) Open/Closed
 - d) Liskov Substitution
 - **✓** Answer: c

10. JDBC & NoSQL

- **V** Direct Questions
 - 1. Which package is used for JDBC in Java?
 - a) java.io
 - b) java.net
 - c) java.sql
 - d) java.db
 - **✓** Answer: c
 - 2. Which method is used to execute a SELECT query in JDBC?
 - a) executeUpdate()
 - b) execute()
 - c) executeQuery()
 - d) executeSelect()
 - **✓** Answer: c
 - 3. Which of the following is a NoSQL database?
 - a) MySQL
 - b) Oracle
 - c) MongoDB
 - d) SQLite
 - **✓** Answer: c

Scenario-Based Questions

- 4. You want to retrieve data using JDBC. What steps are required?
 - a) Only load the driver
 - b) Only write the query
 - c) Load driver \rightarrow Get connection \rightarrow Create statement \rightarrow Execute query
 - d) Use Scanner
 - **✓** Answer: c
- 5. Your application needs to store unstructured JSON data. What database is best?
 - a) MySQL
 - b) PostgreSQL
 - c) MongoDB
 - d) Oracle
 - **✓** Answer: c