

Assessment-1

50 MCQ questions and 2 coding questions

Core Java

1. Which of the following is not a Java feature?
 - A. Dynamic
 - B. Architecture Neutral
 - C. Use of Pointers
 - D. Object-oriented
 - **Answer: C**
2. Which of the following is the correct syntax for a main method in Java?
 - A. `public void main(String args[])`
 - B. `public static void main(String args[])`
 - C. `public static int main(String args[])`
 - D. `public int main(String args[])`
 - **Answer: B**
3. Which data type is used to create a variable that should store text?
 - A. `myString`
 - B. `string`
 - C. `String`
 - D. `Txt`
 - **Answer: C**
4. Which of the following is a valid declaration of a char?
 - A. `char ch = '\utea';`
 - B. `char ca = 'tea';`
 - C. `char cr = '\u0223;`
 - D. `char cc = '\itea';`
 - **Answer: A**
5. Which method can be used to find the length of a string in Java?
 - A. `length()`
 - B. `getSize()`
 - C. `getLength()`
 - D. `size()`
 - **Answer: A**
6. Which of the following is a valid keyword in Java?
 - A. `interface`
 - B. `string`
 - C. `Float`
 - D. `unsigned`
 - **Answer: A**
7. Which of the following is not an access modifier in Java?
 - A. `protected`
 - B. `public`
 - C. `void`
 - D. `private`
 - **Answer: C**

8. Which of these cannot be used for a variable name in Java?
- A. identifier
 - B. variable
 - C. 1st_variable
 - D. \$var
 - **Answer: C**
9. Which of the following loops will execute the body of loop even when the condition controlling the loop is initially false?
- A. for
 - B. while
 - C. do-while
 - D. none
 - **Answer: C**
10. What is the size of a byte variable in Java?
- A. 4 bits
 - B. 8 bits
 - C. 16 bits
 - D. 32 bits
 - **Answer: A**

Java 8 Features

11. Which of the following is a new feature in Java 8?
- A. String concatenation
 - B. Lambdas
 - C. Swing
 - D. Collections
 - **Answer: B**
12. What is the use of the `default` keyword in interfaces in Java 8?
- A. To define the default implementation of a method
 - B. To mark the method for deletion
 - C. To overload the method
 - D. To define a new class
 - **Answer: A**
13. Which of the following is true about functional interfaces in Java 8?
- A. They must contain exactly one abstract method
 - B. They can contain multiple abstract methods
 - C. They must be annotated with `@FunctionalInterface`
 - D. They can be used as anonymous classes only
 - **Answer: A**
14. Which package contains the `Stream` API in Java 8?
- A. `java.lang`
 - B. `java.io`
 - C. `java.util.stream`
 - D. `java.util.function`
 - **Answer: C**
15. Which of the following is not a valid method of `java.util.stream.Stream`?
- A. `filter`
 - B. `map`
 - C. `collect`

- D. parse
- **Answer: D**
- 16. Which of the following is used to create an infinite stream in Java 8?
 - A. Stream.generate()
 - B. Stream.infinite()
 - C. Stream.create()
 - D. Stream.repeat()
 - **Answer: B**
- 17. What does the Optional class in Java 8 help to address?
 - A. NullPointerExceptions
 - B. Compile-time errors
 - C. Infinite loops
 - D. Incorrect type casting
 - **Answer: A**
- 18. Which method is used to check if an Optional contains a value in Java 8?
 - A. hasValue()
 - B. isPresent()
 - C. exists()
 - D. valuePresent()
 - **Answer: C**
- 19. What type of expression is a lambda expression in Java 8?
 - A. Anonymous function
 - B. Named function
 - C. Parameterized function
 - D. Static function
 - **Answer: A**
- 20. Which functional interface does the forEach method in Java 8 accept?
 - A. Consumer
 - B. Supplier
 - C. Function
 - D. Predicate
 - **Answer: A**

JDBC

- 21. Which of the following is not a JDBC driver type?
 - A. JDBC-ODBC bridge driver
 - B. Native-API driver
 - C. Network Protocol driver
 - D. Embedded driver
 - **Answer: D**
- 22. Which method is used to execute a SELECT query in JDBC?
 - A. execute()
 - B. executeQuery()
 - C. executeUpdate()
 - D. executeSelect()
 - **Answer: B**
- 23. Which method is used to execute an INSERT, UPDATE, or DELETE query in JDBC?
 - A. execute()

- B. executeQuery()
 - C. executeUpdate()
 - D. executeInsert()
 - **Answer: C**
24. Which JDBC type represents a SQL DATE?
- A. java.sql.Date
 - B. java.sql.Timestamp
 - C. java.sql.Time
 - D. java.util.Date
 - **Answer: D**
25. Which method is used to load a JDBC driver class in Java?
- A. Class.forName()
 - B. DriverManager.load()
 - C. Driver.load()
 - D. DriverManager.registerDriver()
 - **Answer: A**
26. What does the getConnection method of DriverManager return?
- A. Statement
 - B. Connection
 - C. ResultSet
 - D. SQLWarning
 - **Answer: B**
27. Which of the following is not a valid JDBC URL?
- A. jdbc:mysql://localhost:3306/mydb
 - B. jdbc:oracle:thin:@localhost:1521
 - C. jdbc:sqlserver://localhost;databaseName=mydb
 - D. jdbc:database://localhost/mydb
 - **Answer: D**
28. How do you set a string parameter in a PreparedStatement in JDBC?
- A. setString(index, value)
 - B. setParameter(index, value)
 - C. setStringValue(index, value)
 - D. setParam(index, value)
 - **Answer: A**
29. Which method is used to close a Connection object in JDBC?
- A. closeConnection()
 - B. end()
 - C. close()
 - D. disconnect()
 - **Answer: C**
30. What exception is thrown by JDBC methods?
- A. SQLException
 - B. IOException
 - C. ClassNotFoundException
 - D. ConnectionException
 - **Answer: A**

Collections

31. Which of the following is not a part of the Java Collections Framework?

- A. HashMap
 - B. Hashtable
 - C. TreeSet
 - D. Array
 - **Answer: D**
32. Which class provides a resizable array implementation in Java?
- A. Array
 - B. Arrays
 - C. ArrayList
 - D. LinkedList
 - **Answer: D**
33. Which of the following is a marker interface?
- A. Serializable
 - B. Cloneable
 - C. EventListener
 - D. All of the above
 - **Answer: D**
34. Which method is used to add an element at a specific position in a list?
- A. add()
 - B. insert()
 - C. addAt()
 - D. add(index, element)
 - **Answer: D**
35. Which interface does java.util.HashSet implement?
- A. List
 - B. Collection
 - C. Set
 - D. Map
 - **Answer: C**

Exception Handling

36. Which of the following is a checked exception?
- A. IOException
 - B. NullPointerException
 - C. ArrayIndexOutOfBoundsException
 - D. ArithmeticException
 - **Answer: A**
37. Which keyword is used to handle exceptions in Java?
- A. try
 - B. catch
 - C. throw
 - D. All of the above
 - **Answer: D**
38. Which block is always executed in Java, whether an exception is handled or not?
- A. try
 - B. catch
 - C. finally
 - D. throw
 - **Answer: C**

39. Which of the following is true about the `throw` keyword in Java?

- ☐ A. Used to declare an exception
- ☐ B. Used to throw an exception
- ☐ C. Used to handle an exception
- ☐ D. Used to ignore an exception
- ☐ **Answer: B**

40. Which of the following is a runtime exception?

- ☐ A. `IOException`
- ☐ B. `SQLException`
- ☐ C. `ClassNotFoundException`
- ☐ D. `NullPointerException`
- ☐ **Answer: D**

Multithreading

41. Which method must be implemented by all threads?

- ☐ A. `run()`
- ☐ B. `start()`
- ☐ C. `execute()`
- ☐ D. `main()`
- ☐ **Answer: A**

42. Which of the following is a valid constructor of the `Thread` class?

- ☐ A. `Thread()`
- ☐ B. `Thread(Runnable r)`
- ☐ C. `Thread(String name)`
- ☐ D. All of the above
- ☐ **Answer: A**

43. Which of the following is the correct way to start a new thread?

- ☐ A. `thread.run()`
- ☐ B. `thread.start()`
- ☐ C. `thread.init()`
- ☐ D. `thread.execute()`
- ☐ **Answer: B**

44. Which method is used to pause the execution of a thread for a specific period?

- ☐ A. `suspend()`
- ☐ B. `stop()`
- ☐ C. `sleep()`
- ☐ D. `wait()`
- ☐ **Answer: C**

45. Which is the correct way to implement a thread in Java?

- ☐ A. Extend the `Thread` class
- ☐ B. Implement the `Runnable` interface
- ☐ C. Both A and B
- ☐ D. None of the above
- ☐ **Answer: C**

46. Which method is used to wait for a thread to finish its execution?

- ☐ A. `wait()`
- ☐ B. `notify()`
- ☐ C. `join()`
- ☐ D. `finish()`

- **Answer: C**
- 47. **What does the `synchronized` keyword in Java do?**
 - A. Allows multiple threads to access a resource
 - B. Prevents multiple threads from accessing a resource simultaneously
 - C. Stops a thread from executing
 - D. Starts a new thread
- **Answer: A**
- 48. **Which method is called when a thread is started?**
 - A. `init()`
 - B. `run()`
 - C. `start()`
 - D. `execute()`
- **Answer: C**
- 49. **Which of the following is not a state of a thread?**
 - A. New
 - B. Runnable
 - C. Blocked
 - D. Finished
- **Answer: D**
- 50. **What does the `wait()` method do in a synchronized block?**
 - A. Releases the lock and waits until `notify()` or `notifyAll()` is called
 - B. Acquires the lock and waits
 - C. Continues execution without waiting
 - D. Throws an exception
- **Answer: A**

Assesment-2

Spring Core

1. **Which of the following is not a core module of the Spring Framework?**
 - A. Spring AOP
 - B. Spring MVC
 - C. Spring ORM
 - D. Spring Data
- **Answer: D**
2. **Which of the following is a benefit of using Spring Framework?**
 - A. Lightweight
 - B. Inversion of Control
 - C. Aspect-Oriented Programming
 - D. All of the above
- **Answer: D**

3. **Which annotation is used to define a Spring bean?**
- A. @Component
 - B. @Bean
 - C. @Service
 - D. All of the above
 - **Answer: B**
4. **What is the default scope of a Spring bean?**
- A. Singleton
 - B. Prototype
 - C. Request
 - D. Session
 - **Answer: A**
5. **Which of the following is used for dependency injection in Spring?**
- A. Constructor injection
 - B. Setter injection
 - C. Field injection
 - D. All of the above
 - **Answer: A**

Spring JDBC

6. **Which class is used to simplify database operations in Spring JDBC?**
- A. JdbcTemplate
 - B. HibernateTemplate
 - C. JpaTemplate
 - D. SqlTemplate
 - **Answer: A**
7. **Which method in JdbcTemplate is used to execute a query that returns a single row?**
- A. queryForMap
 - B. queryForObject
 - C. queryForList
 - D. execute
 - **Answer: B**
8. **How do you handle exceptions in Spring JDBC?**
- A. By using try-catch blocks
 - B. Using SQLExceptionTranslator
 - C. By implementing ErrorHandler
 - D. Using ExceptionHandler
 - **Answer: B**

Spring MVC

9. **Which annotation is used to mark a class as a Spring MVC controller?**
- A. @Controller
 - B. @Service
 - C. @Repository

- D. @Component
 - **Answer: A**
10. Which annotation is used to map a web request to a specific method in a controller?
- A. @RequestMapping
 - B. @GetMapping
 - C. @PostMapping
 - D. All of the above
 - **Answer: D**
11. Which of the following is a correct way to handle exceptions in Spring MVC?
- A. Using @ExceptionHandler
 - B. Using @ControllerAdvice
 - C. Using HandlerExceptionResolver
 - D. All of the above
 - **Answer: D**
12. What is the default return type of a controller method in Spring MVC?
- A. ModelAndView
 - B. String
 - C. void
 - D. Object
 - **Answer: C**

Spring Security

13. Which of the following is not a core component of Spring Security?
- A. Authentication
 - B. Authorization
 - C. Auditing
 - D. Encryption
 - **Answer: C**
14. Which filter is used by Spring Security to perform authentication?
- A. AuthenticationFilter
 - B. UsernamePasswordAuthenticationFilter
 - C. AuthorizationFilter
 - D. LoginFilter
 - **Answer: B**
15. How can you configure method-level security in Spring?
- A. Using @Secured
 - B. Using @PreAuthorize
 - C. Using @RolesAllowed
 - D. All of the above
 - **Answer: D**
16. Which annotation is used to enable Spring Security in a Spring Boot application?
- A. @EnableWebSecurity
 - B. @EnableSecurity
 - C. @EnableSpringSecurity

- D. @EnableAuthorization
- **Answer: A**

Hibernate

17. Which of the following is not a Hibernate object state?

- A. Transient
- B. Persistent
- C. Detached
- D. Static
- **Answer: D**

18. Which method is used to save an object in Hibernate?

- A. save()
- B. persist()
- C. saveOrUpdate()
- D. All of the above
- **Answer: A**

19. Which of the following is used to configure Hibernate?

- A. hibernate.cfg.xml
- B. hibernate.properties
- C. Both A and B
- D. None of the above
- **Answer: C**

20. Which annotation is used to mark a class as an entity in Hibernate?

- A. @Entity
- B. @Table
- C. @MappedEntity
- D. @HibernateEntity
- **Answer: A**

21. What is the default fetching strategy in Hibernate?

- A. Eager
- B. Lazy
- C. Immediate
- D. Preload
- **Answer: B**

Spring Boot

22. Which annotation is used to enable Spring Boot auto-configuration?

- A. @EnableAutoConfiguration
- B. @SpringBootApplication
- C. @EnableConfiguration
- D. @AutoConfiguration
- **Answer: B**

23. How do you run a Spring Boot application?

- A. Using `java -jar`
- B. Using `mvn spring-boot:run`

- C. Using an IDE
 - D. All of the above
 - **Answer: C**
24. Which file is used to configure Spring Boot application settings?
- A. application.properties
 - B. application.yml
 - C. Both A and B
 - D. application.xml
 - **Answer: C**
25. Which dependency is used to create a Spring Boot project?
- A. spring-boot-starter
 - B. spring-boot-autoconfigure
 - C. spring-boot-starter-parent
 - D. spring-boot-application
 - **Answer: C**

Maven

26. What is the default packaging type in Maven?
- A. jar
 - B. war
 - C. ear
 - D. pom
 - **Answer: A**
27. Which file is used to configure a Maven project?
- A. build.xml
 - B. project.xml
 - C. pom.xml
 - D. settings.xml
 - **Answer: C**
28. Which Maven plugin is used to compile Java code?
- A. maven-compiler-plugin
 - B. maven-jar-plugin
 - C. maven-war-plugin
 - D. maven-assembly-plugin
 - **Answer: A**
29. Which of the following is not a build lifecycle in Maven?
- A. clean
 - B. validate
 - C. deploy
 - D. compile
 - **Answer: B**
30. Which of the following is used to specify a dependency in Maven?
- A. <dependency>
 - B. <include>
 - C. <require>
 - D. <use>

- **Answer: A**

Git

31. Which command is used to create a new Git repository?
- A. git init
 - B. git create
 - C. git new
 - D. git start
 - **Answer: A**
32. Which command is used to clone a Git repository?
- A. git copy
 - B. git clone
 - C. git pull
 - D. git download
 - **Answer: B**
33. Which command is used to stage changes for the next commit?
- A. git add
 - B. git commit
 - C. git push
 - D. git stage
 - **Answer: A**
34. Which command is used to view the commit history in Git?
- A. git history
 - B. git log
 - C. git status
 - D. git commits
 - **Answer: B**
35. Which command is used to merge branches in Git?
- A. git merge
 - B. git integrate
 - C. git join
 - D. git rebase
 - **Answer: A**

Spring ORM with Hibernate

36. Which class is used as the central interface for Spring's Hibernate integration?
- A. HibernateTemplate
 - B. HibernateManager
 - C. HibernateController
 - D. HibernateExecutor
 - **Answer: B**
37. Which method in HibernateTemplate is used to save an entity?
- A. save
 - B. persist
 - C. saveOrUpdate

- D. All of the above

○ **Answer: D**

38. Which transaction management type is recommended in Spring applications?

- A. Programmatic
- B. Declarative
- C. Both A and B
- D. None of the above

○ **Answer: B**

39. Which annotation is used to enable transaction management in Spring?

- A. @EnableTransactionManagement
- B. @Transaction
- C. @Transactional
- D. @TransactionManagement

○ **Answer: A**

40. How do you configure a DataSource in a Spring application?

- A. Using Java configuration
- B. Using XML configuration
- C. Using application.properties or application.yml
- D. All of the above

○ **Answer: D**