

# Session 29 and 810 Questions

## Session 1 & 2

### ◆ EASY LEVEL MCQs (1–20)

---

#### 1. JDBC stands for

- A. Java Data Binding Connectivity
- B. Java Database Connectivity
- C. Java Direct Backend Connection
- D. Java DataBase Compiler

 Answer: B

---

#### 2. Which package contains JDBC core interfaces?

- A. java.sql
- B. javax.sql
- C. java.jdbc
- D. javax.jdbc

 Answer: A

---

#### 3. Which JDBC component establishes a connection with DB?

- A. Statement
- B. ResultSet
- C. Connection
- D. DriverManager

 Answer: C

---

#### 4. Which class is used to load JDBC driver?

- A. Driver
- B. DriverManager

- A. Class
- B. Statement
- C. Connection

 **Answer:** C

---

## 5. Which method is used to get DB connection?

- A. connect()
- B. open()
- C. getConnection()
- D. createConnection()

 **Answer:** C

---

## 6. JDBC driver converts Java calls into DB-specific calls

- A. Statement
- B. ResultSet
- C. Driver
- D. Connection

 **Answer:** C

---

## 7. Which JDBC driver type is platform independent?

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

 **Answer:** D

---

## 8. Which interface executes static SQL queries?

- A. PreparedStatement
- B. CallableStatement
- C. Statement
- D. ResultSet

 **Answer:** C

---

## **9. Which interface is best to prevent SQL Injection?**

- A. Statement
- B. PreparedStatement
- C. ResultSet
- D. Driver

 **Answer:** B

---

## **10. Which object holds query result?**

- A. Connection
- B. Statement
- C. ResultSet
- D. Driver

 **Answer:** C

---

## **11. Which JDBC interface is used for stored procedures?**

- A. Statement
- B. PreparedStatement
- C. CallableStatement
- D. ResultSet

 **Answer:** C

---

## **12. DAO pattern separates**

- A. UI and Database
- B. Business and Presentation
- C. Database logic from business logic
- D. Database and Server

 **Answer:** C

---

## **13. Default auto-commit mode in JDBC is**

- A. true
- B. false
- C. depends on DB
- D. disabled

 Answer: A

---

**14. Which method commits a transaction?**

- A. save()
- B. commit()
- C. end()
- D. close()

 Answer: B

---

**15. Which method cancels a transaction?**

- A. cancel()
- B. undo()
- C. rollback()
- D. reset()

 Answer: C

---

**16. Which driver type uses native DB API?**

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

 Answer: B

---

**17. Which JDBC driver is fastest?**

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

 Answer: D

---

**18. SQL Injection happens due to**

- A. Poor indexing
- B. Hardcoded SQL
- C. Improper input validation
- D. Missing joins

 Answer: C

---

### 19. Which method closes DB connection?

- A. destroy()
- B. stop()
- C. close()
- D. terminate()

 Answer: C

---

### 20. Which interface is extended by PreparedStatement?

- A. Connection
- B. Statement
- C. ResultSet
- D. Driver

 Answer: B

---

## ◆ MEDIUM LEVEL MCQs (21–40)

---

### 21. JDBC architecture is

- A. 1-tier
- B. 2-tier
- C. 3-tier
- D. All of the above

 Answer: D

---

### 22. What happens if autoCommit = true?

- A. Manual commit required
- B. Each SQL is auto committed
- C. rollback() won't work
- D. Both B and C

 Answer: D

---

### 23. Which driver requires client-side native library?

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

 Answer: B

---

### 24. Which JDBC object is created using Connection?

- A. ResultSet
- B. Driver
- C. Statement
- D. Database

 Answer: C

---

### 25. Which is NOT part of JDBC API?

- A. Connection
- B. Statement
- C. Servlet
- D. ResultSet

 Answer: C

---

### 26. SQL Injection example

```
SELECT * FROM users WHERE name=' ' OR '1'='1'
```

This is possible using:

- A. PreparedStatement
- B. CallableStatement

- C. Statement
- D. Batch processing

 **Answer:** C

---

## **27. Which is true about PreparedStatement?**

- A. Faster execution
- B. Precompiled SQL
- C. Prevents SQL injection
- D. All

 **Answer:** D

---

## **28. What is returned by executeQuery()?**

- A. boolean
- B. int
- C. ResultSet
- D. Object

 **Answer:** C

---

## **29. What does executeUpdate() return?**

- A. boolean
- B. number of rows affected
- C. ResultSet
- D. void

 **Answer:** B

---

## **30. DAO pattern improves**

- A. Performance
- B. Maintainability
- C. Scalability
- D. All

 **Answer:** D

---

### **31. Which method disables auto commit?**

```
con.setAutoCommit(false);
```

- A. startTransaction()
- B. disableCommit()
- C. setAutoCommit(false)
- D. begin()

 **Answer:** C

---

### **32. Which JDBC interface supports IN, OUT parameters?**

- A. Statement
- B. PreparedStatement
- C. CallableStatement
- D. ResultSet

 **Answer:** C

---

### **33. Which is a valid stored procedure call?**

```
{call getEmp(?,?)}
```

- A. Statement
- B. PreparedStatement
- C. CallableStatement
- D. ResultSet

 **Answer:** C

---

### **34. Which is NOT advantage of DAO?**

- A. Loose coupling
- B. Easier testing
- C. Tight DB dependency
- D. Clean architecture

 **Answer:** C

---

### **35. Which exception is thrown in JDBC?**

- A. IOException
- B. SQLException
- C. ClassNotFoundException
- D. All

 **Answer:** D

---

### **36. Which ResultSet type allows scrolling?**

- A. TYPE\_FORWARD\_ONLY
- B. TYPE\_SCROLL\_INSENSITIVE
- C. TYPE\_SCROLL\_SENSITIVE
- D. Both B and C

 **Answer:** D

---

### **37. Which is best practice?**

- A. Hardcoded SQL
- B. String concatenation
- C. PreparedStatement
- D. Dynamic SQL

 **Answer:** C

---

### **38. Which method registers output parameter?**

```
cs.registerOutParameter(2, Types.INTEGER);
```

- A. PreparedStatement
- B. CallableStatement
- C. Statement
- D. ResultSet

 **Answer:** B

---

### **39. Which layer uses DAO?**

- A. Presentation
- B. Service
- C. Database
- D. Client

 Answer: B

---

#### 40. Which is NOT JDBC driver type?

- A. Native API driver
- B. Network protocol driver
- C. Thin driver
- D. ORM driver

 Answer: D

---

## HARD LEVEL MCQs (41–60)

---

#### 41. What happens if commit() is not called and connection closes?

- A. Data saved
- B. Auto commit happens
- C. Rollback occurs
- D. DB crashes

 Answer: C

---

#### 42. Identify bug

```
Connection con = DriverManager.getConnection(url);
Statement st = con.createStatement();
st.executeUpdate("INSERT...");
con.rollback();
```

- A. rollback invalid
- B. autoCommit true
- C. syntax error
- D. missing close

 Answer: B

---

#### 43. Which DAO design is correct?

- A. DAO → UI → DB
- B. UI → DAO → DB
- C. DB → DAO → UI
- D. Service → UI → DAO

 **Answer:** B

---

#### 44. Which code is SQL injection safe?

```
String q = "SELECT * FROM user WHERE name=?";  
PreparedStatement ps = con.prepareStatement(q);
```

- A. Yes
- B. No
- C. Depends
- D. Compile error

 **Answer:** A

---

#### 45. What does this do?

```
Class.forName("com.mysql.cj.jdbc.Driver");
```

- A. Opens DB
- B. Loads driver
- C. Executes SQL
- D. Creates table

 **Answer:** B

---

#### 46. Which is true about Type 4 driver?

- A. Needs ODBC
- B. Needs native lib
- C. Pure Java
- D. Slow

 **Answer:** C

---

#### 47. What is wrong?

```
PreparedStatement ps = con.prepareStatement(sql);
```

```
ps.executeQuery( "SELECT * FROM emp" );
```

- A. executeQuery invalid
- B. SQL duplication
- C. Compile error
- D. No issue

 **Answer:** A

---

#### **48. Which ensures atomicity in JDBC?**

- A. autoCommit
- B. commit & rollback
- C. ResultSet
- D. Statement

 **Answer:** B

---

#### **49. Which DAO component changes when DB changes?**

- A. Service layer
- B. UI
- C. DAO implementation
- D. Controller

 **Answer:** C

---

#### **50. CallableStatement supports**

- A. Only SELECT
- B. Only INSERT
- C. Functions & procedures
- D. Only procedures

 **Answer:** C

---

#### **51. What is returned by execute()?**

- A. ResultSet
- B. boolean
- C. int
- D. void

 **Answer:** B

---

## **52. Which is correct transaction sequence?**

- A. commit → rollback
- B. setAutoCommit(false) → execute → commit
- C. execute → rollback → commit
- D. rollback → execute

 **Answer:** B

---

## **53. Which approach improves performance most?**

- A. Statement
- B. PreparedStatement
- C. CallableStatement
- D. ResultSet

 **Answer:** B

---

## **54. Which is NOT responsibility of DAO?**

- A. Data persistence
- B. SQL handling
- C. Business validation
- D. Mapping result

 **Answer:** C

---

## **55. SQL Injection mainly targets**

- A. JVM
- B. Database
- C. Network
- D. UI

 **Answer:** B

---

## **56. Which is thread-safe?**

- A. Connection
- B. Statement
- C. ResultSet
- D. None

 Answer: D

---

### 57. Which closes DB resources properly?

```
finally {  
    rs.close();  
    ps.close();  
    con.close();  
}
```

- A. Correct
- B. Incorrect
- C. Partial
- D. Risky

 Answer: A

---

### 58. Best place to handle SQLException

- A. Controller
- B. DAO
- C. UI
- D. Database

 Answer: B

---

### 59. Which improves loose coupling?

- A. JDBC
- B. DAO Pattern
- C. SQL
- D. Stored Procedure

 Answer: B

---

### 60. Which is best for large batch inserts?

- A. Statement
- B. PreparedStatement with batch
- C. CallableStatement
- D. ResultSet

 **Answer:** B

## Session 3

### ◆ EASY LEVEL MCQs (1–15)

---

#### 1. J2EE stands for

- A. Java 2 Enterprise Edition
- B. Java Enterprise Environment
- C. Java Extended Edition
- D. Java Embedded Edition

 **Answer:** A

---

#### 2. J2EE is mainly used for building

- A. Desktop applications
- B. Mobile applications
- C. Enterprise web applications
- D. Embedded systems

 **Answer:** C

---

#### 3. Which is a J2EE web component?

- A. Servlet
- B. Applet
- C. Swing
- D. AWT

 **Answer:** A

---

#### **4. J2EE applications run inside**

- A. JVM
- B. Browser
- C. J2EE Container
- D. Operating System

 **Answer:** C

---

#### **5. Which file defines web application configuration?**

- A. application.xml
- B. web.xml
- C. pom.xml
- D. build.xml

 **Answer:** B

---

#### **6. Default packaging format of a web application**

- A. JAR
- B. EAR
- C. WAR
- D. ZIP

 **Answer:** C

---

#### **7. Which directory contains compiled classes in a WAR file?**

- A. META-INF
- B. WEB-INF/classes
- C. WEB-INF/lib
- D. src

 **Answer:** B

---

#### **8. Which container manages servlets and JSPs?**

- A. EJB container
- B. Web container
- C. Application container
- D. Client container

 **Answer:** B

---

## **9. Which is a deployment descriptor?**

- A. web.xml
- B. index.jsp
- C. servlet.java
- D. pom.xml

 **Answer:** A

---

## **10. J2EE is now officially known as**

- A. JSE
- B. Jakarta EE
- C. Java EE Lite
- D. Spring EE

 **Answer:** B

---

## **11. Which tool is commonly used for deployment?**

- A. Eclipse
- B. Tomcat Manager
- C. Notepad
- D. JVM

 **Answer:** B

---

## **12. Which is NOT a J2EE container type?**

- A. Web container
- B. EJB container
- C. Applet container
- D. Client container

 **Answer:** C

---

## **13. Web services in J2EE usually use**

- A. FTP
- B. SOAP / REST
- C. JDBC
- D. RMI only

 Answer: B

---

#### **14. Which server supports J2EE web apps?**

- A. Apache Tomcat
- B. MySQL
- C. Eclipse IDE
- D. JVM

 Answer: A

---

#### **15. Which file is mandatory for a J2EE compliant web app (older spec)?**

- A. web.xml
- B. index.html
- C. pom.xml
- D. context.xml

 Answer: A

---

### **◆ MEDIUM LEVEL MCQs (16–30)**

---

#### **16. J2EE container is responsible for**

- A. UI rendering
- B. Memory allocation
- C. Lifecycle & security management
- D. OS scheduling

 Answer: C

---

#### **17. Which folder is NOT directly accessible by client?**

- A. /images
- B. /css
- C. /WEB-INF
- D. /js

 **Answer:** C

---

## **18. Which file stores third-party libraries in WAR?**

- A. WEB-INF/classes
- B. WEB-INF/lib
- C. META-INF
- D. src/main/java

 **Answer:** B

---

## **19. What happens during web application deployment?**

- A. Compilation
- B. Loading descriptors
- C. Resource binding
- D. All of the above

 **Answer:** D

---

## **20. Which lifecycle method is called once per web app?**

- A. doGet()
- B. doPost()
- C. init()
- D. service()

 **Answer:** C

---

## **21. What is true about J2EE compliant web apps?**

- A. Must use JSP
- B. Must follow standard structure
- C. Must use Spring
- D. Must use EJB

 **Answer:** B

---

## **22. Which tool helps package WAR files?**

- A. JVM
- B. Maven
- C. Browser
- D. JDBC

 **Answer:** B

---

## **23. Which lifecycle phase loads servlets?**

- A. Deployment
- B. Initialization
- C. Request handling
- D. Destruction

 **Answer:** B

---

## **24. Which descriptor is optional in modern web apps?**

- A. web.xml
- B. servlet mapping
- C. annotations
- D. Both A and B

 **Answer:** A

---

## **25. Which annotation replaces web.xml mapping?**

- A. @WebServlet
- B. @Controller
- C. @Service
- D. @Component

 **Answer:** A

---

## **26. Which server is a full J2EE container?**

- A. Tomcat
- B. GlassFish

- C. Apache HTTP Server
- D. Nginx

 **Answer:** B

---

## **27. Which phase occurs when server shuts down?**

- A. init()
- B. service()
- C. destroy()
- D. load()

 **Answer:** C

---

## **28. Which J2EE feature supports distributed systems?**

- A. JDBC
- B. Web Services
- C. JSP
- D. HTML

 **Answer:** B

---

## **29. What does EAR contain?**

- A. Only JAR files
- B. Only WAR files
- C. Web + EJB modules
- D. Only JSP files

 **Answer:** C

---

## **30. Deployment tools mainly help in**

- A. Writing code
- B. Testing UI
- C. Packaging & deploying apps
- D. Debugging JVM

 **Answer:** C

---

# HARD LEVEL MCQs (31–45)

---

## 31. Which order is correct for web app lifecycle?

- A. init → deploy → destroy
- B. deploy → init → service → destroy
- C. service → init → destroy
- D. init → service → deploy

 Answer: B

---

## 32. What happens if web.xml has errors?

- A. Server ignores it
- B. App deploys partially
- C. Deployment fails
- D. App runs normally

 Answer: C

---

## 33. Which container handles transaction & security?

- A. Web container
- B. Client container
- C. EJB container
- D. JVM

 Answer: C

---

## 34. Why WEB-INF is protected?

- A. Performance
- B. Security
- C. Caching
- D. Logging

 Answer: B

---

## 35. Which is true about J2EE containers?

- A. They manage thread creation manually
- B. They abstract low-level services
- C. They replace JVM
- D. They execute SQL

 **Answer:** B

---

### **36. Which change requires redeployment?**

- A. HTML change
- B. JSP change
- C. web.xml change
- D. CSS change

 **Answer:** C

---

### **37. J2EE web services mainly enable**

- A. UI reuse
- B. Code duplication
- C. Interoperability
- D. Faster compilation

 **Answer:** C

---

### **38. What is hot deployment?**

- A. Deploy during runtime without restart
- B. Deploy during JVM startup
- C. Deploy only once
- D. Manual deployment

 **Answer:** A

---

### **39. Which packaging violates J2EE standards?**

- A. WAR inside EAR
- B. JSP outside WEB-INF
- C. JAR inside WEB-INF/lib
- D. web.xml inside WEB-INF

 **Answer:** B

---

#### **40. Which container creates servlet instance?**

- A. JVM
- B. Browser
- C. Web container
- D. OS

 **Answer:** C

---

#### **41. Which is NOT responsibility of deployment tools?**

- A. Packaging
- B. Configuration
- C. Writing business logic
- D. Server deployment

 **Answer:** C

---

#### **42. Which web service style is lighter?**

- A. SOAP
- B. REST
- C. RMI
- D. CORBA

 **Answer:** B

---

#### **43. What breaks J2EE portability?**

- A. Using standard APIs
- B. Server-specific code
- C. WAR packaging
- D. web.xml

 **Answer:** B

---

#### **44. Which ensures vendor independence?**

- A. JVM
- B. J2EE specification

- A. IDE
- B. Database

 **Answer:** B

---

#### **45. J2EE compliance ensures**

- A. Faster execution
- B. Vendor lock-in
- C. Standard behavior across servers
- D. Less memory usage

 **Answer:** C

### **Sessions 4, 5, 6 & 7**

#### **◆ EASY LEVEL MCQs (1–30)**

---

##### **1. Servlets are used to generate**

- A. Static content
- B. Dynamic content
- C. Binary files
- D. Only HTML

 **Answer:** B

---

##### **2. Servlets run on**

- A. Client machine
- B. Browser
- C. Application server
- D. Database

 **Answer:** C

---

##### **3. Which protocol is mainly used by servlets?**

- A. FTP
- B. SMTP
- C. HTTP
- D. TCP

 **Answer:** C

---

#### **4. Which interface must every servlet implement?**

- A. HttpServlet
- B. Servlet
- C. GenericServlet
- D. Filter

 **Answer:** B

---

#### **5. Which class is most commonly extended by servlets?**

- A. GenericServlet
- B. Servlet
- C. HttpServlet
- D. Filter

 **Answer:** C

---

#### **6. Servlet lifecycle methods are**

- A. init(), service(), destroy()
- B. start(), execute(), stop()
- C. open(), read(), close()
- D. load(), run(), exit()

 **Answer:** A

---

#### **7. Which method handles HTTP GET requests?**

- A. doPost()
- B. service()
- C. doGet()
- D. init()

 **Answer:** C

---

## **8. Which method handles HTTP POST requests?**

- A. doPost()
- B. doGet()
- C. destroy()
- D. service()

 **Answer:** A

---

## **9. Which object represents client request?**

- A. HttpServletResponse
- B. HttpServletRequest
- C. HttpSession
- D. Cookie

 **Answer:** B

---

## **10. Which object sends response to client?**

- A. Request
- B. Session
- C. Response
- D. Cookie

 **Answer:** C

---

## **11. Servlet configuration was traditionally done using**

- A. annotations
- B. web.xml
- C. pom.xml
- D. server.xml

 **Answer:** B

---

## **12. Which annotation defines a servlet?**

- A. @Controller
- B. @WebServlet

- C. @Service
- D. @Component

 **Answer:** B

---

### **13. CGI programs suffer from**

- A. Security issues
- B. Platform dependency
- C. Performance overhead
- D. All of the above

 **Answer:** D

---

### **14. Servlets overcome CGI issues by**

- A. Multithreading
- B. Persistence
- C. Platform independence
- D. All

 **Answer:** D

---

### **15. Which container is commonly used for servlets?**

- A. JBoss
- B. GlassFish
- C. Tomcat
- D. WebLogic

 **Answer:** C

---

### **16. Session is used to**

- A. Store data permanently
- B. Track client state
- C. Store DB records
- D. Cache server data

 **Answer:** B

---

## **17. Which session tracking mechanism stores data on client side?**

- A. HttpSession
- B. URL rewriting
- C. Cookies
- D. ServletContext

 **Answer:** C

---

## **18. Which session tracking stores data on server side?**

- A. Cookies
- B. URL rewriting
- C. HttpSession
- D. Hidden fields

 **Answer:** C

---

## **19. Which method creates a session?**

```
request.getSession();
```

- A. request
- B. response
- C. session
- D. cookie

 **Answer:** A

---

## **20. Which is NOT a session tracking technique?**

- A. Cookies
- B. HttpSession
- C. JDBC
- D. URL rewriting

 **Answer:** C

---

## **21. Which object forwards request to another resource?**

- A. Session
- B. RequestDispatcher

- C. Response
- D. Cookie

 **Answer:** B

---

## **22. Which method forwards request internally?**

- A. sendRedirect()
- B. forward()
- C. include()
- D. refresh()

 **Answer:** B

---

## **23. sendRedirect() is**

- A. Server-side
- B. Client-side
- C. Container-side
- D. DB-side

 **Answer:** B

---

## **24. Which is faster?**

- A. sendRedirect
- B. forward
- C. Both same
- D. Depends

 **Answer:** B

---

## **25. Which HTTP method is idempotent?**

- A. POST
- B. GET
- C. PUT
- D. Both B and C

 **Answer:** D

---

## **26. Which layer contains database logic?**

- A. Servlet
- B. DAO
- C. POJO
- D. Controller

 **Answer:** B

---

## **27. POJO stands for**

- A. Plain Old Java Object
- B. Public Object Java Oriented
- C. Process Oriented Java Object
- D. Portable Object Java

 **Answer:** A

---

## **28. DAO layer helps in**

- A. UI rendering
- B. Business logic
- C. Database abstraction
- D. Session handling

 **Answer:** C

---

## **29. Which object is shared across all users?**

- A. HttpSession
- B. HttpServletRequest
- C. ServletContext
- D. Cookie

 **Answer:** C

---

## **30. Servlet is**

- A. Thread-safe by default
- B. Multithreaded
- C. Single-threaded
- D. Stateless

 **Answer:** B

---

## ◆ MEDIUM LEVEL MCQs (31–60)

---

### 31. Why servlets are faster than CGI?

- A. JVM caching
- B. Multithreading
- C. No process creation
- D. All

 **Answer:** D

---

### 32. Which method is called once per servlet?

- A. doGet()
- B. doPost()
- C. init()
- D. service()

 **Answer:** C

---

### 33. Which method handles all HTTP methods internally?

- A. doGet()
- B. doPost()
- C. service()
- D. init()

 **Answer:** C

---

### 34. Identify error

```
public void doGet(HttpServletRequest req, HttpServletResponse res)
```

- A. Missing throws
- B. Wrong return type
- C. Wrong access modifier
- D. No error

 Answer: A

---

### 35. Which API provides servlet interfaces?

- A. javax.http
- B. javax.servlet
- C. java.servlet
- D. jakarta.http

 Answer: B

---

### 36. Which response method sends redirect?

```
response.sendRedirect("home.jsp");
```

- A. forward
- B. include
- C. redirect
- D. sendRedirect

 Answer: D

---

### 37. Cookies are disabled → which works?

- A. Cookies
- B. URL rewriting
- C. HttpSession
- D. All fail

 Answer: B

---

### 38. Which cookie attribute improves security?

- A. maxAge
- B. domain
- C. secure
- D. path

 Answer: C

---

### **39. Which session ends automatically?**

- A. Browser closed
- B. Server restarted
- C. Timeout
- D. All

 **Answer:** D

---

### **40. Which method invalidates session?**

```
session.invalidate();
```

- A. delete()
- B. destroy()
- C. invalidate()
- D. remove()

 **Answer:** C

---

### **41. What is wrong?**

```
Cookie c = new Cookie("user", "abc");
response.addCookie(c);
request.getSession();
```

- A. Cookie invalid
- B. Order wrong
- C. No issue
- D. Session error

 **Answer:** C

---

### **42. RequestDispatcher include()**

- A. Stops current servlet
- B. Appends output
- C. Redirects browser
- D. Creates new request

 **Answer:** B

---

### **43. forward() shares**

- A. Same request & response
- B. New request
- C. New response
- D. Session only

 **Answer:** A

---

### **44. Which is better for sensitive data?**

- A. Cookies
- B. URL rewriting
- C. HttpSession
- D. Hidden fields

 **Answer:** C

---

### **45. ServletContext vs HttpSession**

- A. User-specific
- B. App-specific
- C. Request-specific
- D. Thread-specific

 **Answer:** B

---

### **46. Which layer handles navigation logic?**

- A. DAO
- B. POJO
- C. Servlet
- D. DB

 **Answer:** C

---

### **47. Which causes thread-safety issue?**

- A. Local variables
- B. Instance variables
- C. Method variables
- D. Parameters

 **Answer:** B

---

#### **48. Best practice for DB access in servlets?**

- A. Direct JDBC
- B. DAO layer
- C. JSP
- D. Scriptlets

 **Answer:** B

---

#### **49. Which HTTP status code is redirect?**

- A. 200
- B. 302
- C. 404
- D. 500

 **Answer:** B

---

#### **50. Which exception occurs in servlet?**

- A. IOException
- B. ServletException
- C. SQLException
- D. All

 **Answer:** D

---

#### **51. Which file maps servlet to URL?**

- A. pom.xml
- B. web.xml
- C. server.xml
- D. context.xml

 **Answer:** B

---

#### **52. Which annotation maps URL?**

`@WebServlet("/login")`

- A. @Controller
- B. @RequestMapping
- C. @WebServlet
- D. @Path

 Answer: C

---

### 53. HttpSession stores data

- A. Client side
- B. Server side
- C. Both
- D. DB

 Answer: B

---

### 54. Which HTTP method is not cacheable?

- A. GET
- B. POST
- C. HEAD
- D. OPTIONS

 Answer: B

---

### 55. Which servlet method handles concurrency?

- A. init
- B. destroy
- C. service
- D. JVM

 Answer: C

---

### 56. Which is NOT responsibility of servlet container?

- A. Thread management
- B. Lifecycle
- C. DB connection pooling
- D. Security

 Answer: C

---

### 57. ServletContext is created

- A. Per request
- B. Per user
- C. Per application
- D. Per servlet

 Answer: C

---

### 58. Which scope is largest?

- A. Request
- B. Session
- C. Application
- D. Page

 Answer: C

---

### 59. Session tracking mainly solves

- A. Authentication
- B. Authorization
- C. Stateless HTTP
- D. Caching

 Answer: C

---

### 60. sendRedirect() causes

- A. One request
- B. Two requests
- C. No request
- D. Infinite loop

 Answer: B

---

 HARD LEVEL MCQs (61–90)

---

## 61. What happens if servlet throws RuntimeException?

- A. JVM crashes
- B. Container handles it
- C. Request hangs
- D. Session invalidated

 Answer: B

---

## 62. Identify bug

```
HttpSession s = request.getSession(false);  
s.setAttribute("user", "abc");
```

- A. getSession(false) may return null
- B. Attribute invalid
- C. Syntax error
- D. No issue

 Answer: A

---

## 63. Which is safest session tracking?

- A. Cookies
- B. URL rewriting
- C. HttpSession
- D. Hidden fields

 Answer: C

---

## 64. Which breaks MVC?

- A. Servlet calls DAO
- B. Servlet contains SQL
- C. DAO returns POJO
- D. Servlet forwards JSP

 Answer: B

---

## 65. Why servlets are not thread-safe by default?

- A. Shared instance variables
- B. JVM limitation
- C. HTTP statelessness
- D. Session handling

 **Answer:** A

---

## **66. Which change needs server restart?**

- A. HTML
- B. JSP
- C. web.xml
- D. CSS

 **Answer:** C

---

## **67. Which is true about cookies?**

- A. Secure by default
- B. Stored on server
- C. Size limited
- D. Unlimited

 **Answer:** C

---

## **68. Why avoid session for large objects?**

- A. Performance overhead
- B. Memory leak
- C. Serialization cost
- D. All

 **Answer:** D

---

## **69. Which layer must NOT access HttpServletRequest?**

- A. Servlet
- B. Controller
- C. DAO
- D. View

 **Answer:** C

---

## **70. Which is correct navigation?**

- A. Servlet → Servlet → DB
- B. Client → Servlet → DAO → DB
- C. JSP → DB
- D. Browser → DAO

 **Answer:** B

---

## **71. Which scenario prefers Cookies?**

- A. Sensitive data
- B. Large data
- C. Small non-sensitive data
- D. Authentication

 **Answer:** C

---

## **72. RequestDispatcher forward vs redirect**

- A. forward hides URL
- B. redirect hides URL
- C. both hide URL
- D. none hide URL

 **Answer:** A

---

## **73. Which improves scalability?**

- A. Storing state in servlet fields
- B. Using HttpSession carefully
- C. Heavy cookies
- D. Global variables

 **Answer:** B

---

## **74. Which HTTP feature complicates session tracking?**

- A. Statelessness
- B. Caching

- C. Encryption
- D. Compression

 **Answer:** A

---

### **75. What causes memory leak in servlets?**

- A. Local variables
- B. Unremoved session attributes
- C. Request parameters
- D. Cookies

 **Answer:** B

---

### **76. Which is best practice?**

- A. JDBC in servlet
- B. DAO + POJO
- C. Scriptlets in JSP
- D. Business logic in JSP

 **Answer:** B

---

### **77. Why prefer forward over redirect internally?**

- A. Faster
- B. Same request
- C. No URL change
- D. All

 **Answer:** D

---

### **78. Which is true?**

- A. Session survives browser close
- B. Cookie survives server restart
- C. Session stored on server
- D. Cookies are secure

 **Answer:** C

---

## **79. Which HTTP response code for error?**

- A. 200
- B. 301
- C. 404
- D. 302

 **Answer:** C

---

## **80. Which layer is easiest to unit test?**

- A. Servlet
- B. DAO
- C. JSP
- D. Container

 **Answer:** B

---

## **81. What breaks portability?**

- A. Using standard API
- B. Server-specific config
- C. WAR packaging
- D. Annotations

 **Answer:** B

---

## **82. Which servlet method should not be overridden?**

- A. init
- B. destroy
- C. service
- D. finalize

 **Answer:** D

---

## **83. Which prevents session fixation?**

- A. Cookies
- B. invalidate() after login
- C. URL rewriting
- D. Hidden fields

 Answer: B

---

#### **84. Why HttpSession preferred over cookies?**

- A. Larger storage
- B. More secure
- C. Server controlled
- D. All

 Answer: D

---

#### **85. Which is NOT session tracking method?**

- A. Cookies
- B. URL rewriting
- C. HttpSession
- D. ServletContext

 Answer: D

---

#### **86. Which servlet API manages deployment?**

- A. javax.servlet
- B. web.xml
- C. Container
- D. JVM

 Answer: C

---

#### **87. Which is safer for login system?**

- A. Cookies only
- B. URL rewriting
- C. HttpSession
- D. Query parameters

 Answer: C

---

#### **88. Which is stateless?**

- A. Servlet
- B. HttpSession
- C. HTTP
- D. Container

 Answer: C

---

### 89. Best way to handle exception?

- A. Print stacktrace
- B. Let JVM handle
- C. Centralized error page
- D. Ignore

 Answer: C

---

### 90. Servlet-based architecture follows

- A. MVC
- B. MVP
- C. MVVM
- D. Layered monolith

 Answer: A

## Sessions 8 & 9

### ◆ EASY LEVEL MCQs (1–15)

---

#### 1. JSP is mainly used for

- A. Database connectivity
- B. Business logic
- C. Presentation layer
- D. Session management

 Answer: C

---

## **2. JSP helps in**

- A. Tight coupling
- B. Separating UI from logic
- C. Writing JDBC
- D. Multithreading

 **Answer:** B

---

## **3. JSP follows which architecture when combined with Servlet?**

- A. Layered
- B. MVC
- C. Monolithic
- D. Client-Server

 **Answer:** B

---

## **4. In MVC, JSP acts as**

- A. Model
- B. Controller
- C. View
- D. Service

 **Answer:** C

---

## **5. Which component controls navigation in MVC?**

- A. JSP
- B. Servlet
- C. DAO
- D. POJO

 **Answer:** B

---

## **6. JSP pages are translated into**

- A. HTML files
- B. XML
- C. Servlets
- D. JSP Beans

 Answer: C

---

## 7. Which phase comes first in JSP lifecycle?

- A. Request processing
- B. Translation
- C. Initialization
- D. Destruction

 Answer: B

---

## 8. Which directive is used to import classes?

```
<%@ page import="java.util.*" %>
```

- A. include
- B. page
- C. taglib
- D. scriptlet

 Answer: B

---

## 9. Which is an implicit JSP object?

- A. request
- B. session
- C. out
- D. All

 Answer: D

---

## 10. Scriptlet tag is

- A. <%= %>
- B. <%! %>
- C. <% %>
- D. \${ }

 Answer: C

---

## 11. Expression tag prints output

- A. <% %>
- B. <%! %>
- C. <%= %>
- D. \${}

 Answer: C

---

## 12. Which scope is default for JSP EL?

- A. application
- B. session
- C. request
- D. page

 Answer: C

---

## 13. Which JSTL tag library is used for logic?

- A. fmt
- B. sql
- C. core
- D. xml

 Answer: C

---

## 14. JSTL stands for

- A. Java Standard Tag Library
- B. Java Servlet Tag Library
- C. Java Script Tag Library
- D. JSP Standard Tool Library

 Answer: A

---

## 15. Which file handles JSP errors globally?

- A. error.jsp
- B. web.xml
- C. index.jsp
- D. servlet.xml

 Answer: B

---

## ◆ MEDIUM LEVEL MCQs (16–30)

---

**16. JSP lifecycle method equivalent to init() is**

- A. jspService()
- B. jsplInit()
- C. jspDestroy()
- D. service()

 Answer: B

---

**17. Which method handles each request in JSP?**

- A. jsplInit()
- B. jspDestroy()
- C. jspService()
- D. service()

 Answer: C

---

**18. Which is NOT an implicit object?**

- A. config
- B. pageContext
- C. response
- D. resultSet

 Answer: D

---

**19. Which JSP element declares variables globally?**

<%! int x = 10; %>

- A. Scriptlet
- B. Expression
- C. Declaration
- D. Directive

 Answer: C

---

## 20. Why scriptlets are discouraged?

- A. Slower execution
- B. Break MVC
- C. Hard to maintain
- D. Both B and C

 Answer: D

---

## 21. Which EL expression accesses session attribute?

`${sessionScope.user}`

- A. requestScope
- B. pageScope
- C. sessionScope
- D. applicationScope

 Answer: C

---

## 22. Which JSTL tag replaces for-loop?

`<c:forEach>`

- A. if
- B. choose
- C. forEach
- D. when

 Answer: C

---

## 23. What is wrong here?

`<%= request.getParameter("name") %>`

- A. Deprecated
- B. Scriptlet usage
- C. Breaks MVC
- D. No issue

 **Answer:** C

---

## **24. Which improves readability most?**

- A. Scriptlets
- B. Expressions
- C. EL + JSTL
- D. Java code

 **Answer:** C

---

## **25. Which scope survives browser close?**

- A. page
- B. request
- C. session
- D. application

 **Answer:** D

---

## **26. How to forward control to JSP from Servlet?**

```
request.getRequestDispatcher("view.jsp").forward(req, res);
```

- A. sendRedirect
- B. forward
- C. include
- D. dispatch

 **Answer:** B

---

## **27. Which JSTL tag handles conditions?**

- A. forEach
- B. if
- C. choose
- D. Both B and C

 **Answer:** D

---

## 28. Which JSP directive defines error page?

```
<%@ page errorPage="error.jsp" %>
```

- A. include
- B. taglib
- C. page
- D. scriptlet

 Answer: C

---

## 29. Which attribute handles exception in error page?

```
<%@ page isErrorPage="true" %>
```

- A. error
- B. exception
- C. isErrorPage
- D. handleError

 Answer: C

---

## 30. Which layer should NOT access DB directly?

- A. DAO
- B. Servlet
- C. JSP
- D. Service

 Answer: C

---

# HARD LEVEL MCQs (31–45)

---

## 31. Which breaks MVC most severely?

- A. JSP using EL
- B. Servlet forwarding JSP
- C. JSP containing JDBC code
- D. DAO returning POJO

 **Answer:** C

---

### **32. JSP implicit objects are created by**

- A. JVM
- B. Browser
- C. Servlet container
- D. Compiler

 **Answer:** C

---

### **33. Which JSP lifecycle phase occurs only once?**

- A. jspService
- B. jsplInit
- C. request handling
- D. response

 **Answer:** B

---

### **34. Identify bug**

```
<c:forEach var="i" begin="1" end="5">  
    ${i}  
</c:forEach>
```

- A. Missing taglib
- B. Wrong EL
- C. Syntax error
- D. No issue

 **Answer:** A

---

### **35. Why JSTL preferred over scriptlets?**

- A. Better performance
- B. Cleaner MVC
- C. Tag reuse
- D. All

 **Answer:** D

---

### **36. Which is evaluated at runtime?**

- A. Directive
- B. Scriptlet
- C. EL
- D. All

 **Answer:** D

---

### **37. Which scope causes memory leak if misused?**

- A. page
- B. request
- C. session
- D. application

 **Answer:** D

---

### **38. Which is safest for UI logic?**

- A. Scriptlets
- B. JavaBeans
- C. EL + JSTL
- D. JDBC

 **Answer:** C

---

### **39. MVC improves**

- A. Tight coupling
- B. Maintainability
- C. Code duplication
- D. Complexity

 **Answer:** B

---

### **40. What happens if JSP changes?**

- A. Server restart required
- B. JSP recompiles automatically

- C. WAR rebuild required
- D. Container crashes

 **Answer:** B

---

#### **41. Which EL avoids NullPointerException?**

`${user.name}`

- A. Always throws
- B. Returns null safely
- C. Compile error
- D. Runtime error

 **Answer:** B

---

#### **42. Which taglib URI is correct for JSTL core?**

`http://java.sun.com/jsp/jstl/core`

- A. xml
- B. sql
- C. core
- D. fmt

 **Answer:** C

---

#### **43. JSP error handling is best done using**

- A. try-catch
- B. errorPage directive
- C. web.xml mapping
- D. Both B and C

 **Answer:** D

---

#### **44. Which component decides view selection?**

- A. JSP
- B. Browser
- C. Servlet (Controller)
- D. DAO

 **Answer:** C

---

#### **45. JSP-Servlet based app is example of**

- A. 2-tier architecture
- B. MVC architecture
- C. Client-Server only
- D. Monolithic

 **Answer:** B

### **Sessions 10, 11, 12 & 13**

#### **◆ EASY LEVEL MCQs (1–15)**

---

#### **1. Hibernate is a**

- A. Web framework
- B. ORM framework
- C. MVC framework
- D. Logging framework

 **Answer:** B

---

#### **2. ORM stands for**

- A. Object Relational Mapping
- B. Object Resource Management
- C. Online Record Model
- D. Object Runtime Mapping

 **Answer:** A

---

#### **3. Hibernate is mainly used to**

- A. Build UI
- B. Handle HTTP requests

- C. Persist Java objects
- D. Manage sessions

 **Answer:** C

---

#### **4. Which file configures Hibernate connection?**

- A. web.xml
- B. pom.xml
- C. hibernate.cfg.xml
- D. context.xml

 **Answer:** C

---

#### **5. Core interface used to interact with DB in Hibernate**

- A. Configuration
- B. Session
- C. Transaction
- D. Criteria

 **Answer:** B

---

#### **6. Which interface represents DB transaction?**

- A. Session
- B. Configuration
- C. Transaction
- D. Query

 **Answer:** C

---

#### **7. Hibernate internally uses**

- A. JDBC
- B. ODBC
- C. JPA only
- D. AWT

 **Answer:** A

---

## **8. Which annotation maps class to table?**

 `@Entity`

- A. `@Table`
- B. `@Entity`
- C. `@Column`
- D. `@Id`

 **Answer:** B

---

## **9. Which annotation maps primary key?**

- A. `@Column`
- B. `@Table`
- C. `@Id`
- D. `@Generated`

 **Answer:** C

---

## **10. Hibernate supports**

- A. Only XML mapping
- B. Only annotations
- C. XML + annotations
- D. Neither

 **Answer:** C

---

## **11. Hibernate SessionFactory is**

- A. Lightweight
- B. Thread-safe
- C. Created per request
- D. Not required

 **Answer:** B

---

## **12. Which query language is Hibernate specific?**

- A. SQL
- B. JPQL

- A. HQL
- B. JPA
- C. HQL
- D. PL/SQL

 **Answer:** C

---

### **13. Which mapping represents one-to-many relation?**

- A. @OneToOne
- B. @ManyToOne
- C. @OneToMany
- D. @ManyToMany

 **Answer:** C

---

### **14. Hibernate entities are**

- A. POJO classes
- B. Servlets
- C. JSPs
- D. DTOs only

 **Answer:** A

---

### **15. Which feature reduces SQL writing?**

- A. JDBC
- B. HQL
- C. HTML
- D. Servlet

 **Answer:** B

---

## **◆ MEDIUM LEVEL MCQs (16–30)**

---

### **16. Hibernate architecture includes**

- A. Configuration
- B. SessionFactory

- C. Session
- D. All

 **Answer:** D

---

### **17. Which object is expensive to create?**

- A. Session
- B. Transaction
- C. SessionFactory
- D. Query

 **Answer:** C

---

### **18. Correct sequence**

- A. Session → SessionFactory
- B. Configuration → SessionFactory → Session
- C. SessionFactory → Configuration → Session
- D. Transaction → Session

 **Answer:** B

---

### **19. Entity lifecycle states are**

- A. new, old, delete
- B. transient, persistent, detached
- C. open, close, commit
- D. start, stop, destroy

 **Answer:** B

---

### **20. Identify state**

```
Employee e = new Employee();
```

- A. Persistent
- B. Detached
- C. Transient
- D. Removed

 **Answer:** C

---

## 21. Identify state

```
session.save(e);
```

- A. Transient
- B. Detached
- C. Persistent
- D. Removed

 Answer: C

---

## 22. Identify state

```
session.close();
```

- A. Transient
- B. Detached
- C. Persistent
- D. New

 Answer: B

---

## 23. Which annotation defines table name?

```
@Table(name="emp")
```

- A. @Entity
- B. @Column
- C. @Table
- D. @Id

 Answer: C

---

## 24. Which mapping embeds object without separate table?

- A. Component mapping
- B. Collection mapping
- C. Inheritance mapping
- D. Association mapping

 Answer: A

---

## **25. Which annotation maps embedded object?**

- A. @Embedded
- B. @ElementCollection
- C. @JoinColumn
- D. @ManyToOne

 **Answer:** A

---

## **26. Which collection mapping stores list of values?**

- A. @OneToMany
- B. @ElementCollection
- C. @ManyToMany
- D. @Embedded

 **Answer:** B

---

## **27. Which query is database independent?**

- A. SQL
- B. HQL
- C. Native query
- D. Stored procedure

 **Answer:** B

---

## **28. Which API builds Criteria queries?**

- A. Session
- B. CriteriaBuilder
- C. Query
- D. Configuration

 **Answer:** B

---

## **29. NamedQuery is defined using**

- A. XML only
- B. Annotation only

- C. Both XML & annotation
- D. Java code

 **Answer:** C

---

### **30. Advantage of Hibernate over JDBC**

- A. Automatic mapping
- B. Caching
- C. Lazy loading
- D. All

 **Answer:** D

---

## **HARD LEVEL MCQs (31–45)**

---

### **31. Which cache is mandatory in Hibernate?**

- A. First-level
- B. Second-level
- C. Query cache
- D. None

 **Answer:** A

---

### **32. First-level cache is associated with**

- A. SessionFactory
- B. Session
- C. JVM
- D. Database

 **Answer:** B

---

### **33. Which annotation defines lazy loading?**

`@OneToMany(fetch = FetchType.LAZY)`

- A. @Fetch
- B. @Lazy
- C. fetch attribute
- D. @Load

 Answer: C

---

### 34. Which causes LazyInitializationException?

- A. Open session
- B. Access lazy data after session close
- C. Using eager fetch
- D. Using HQL

 Answer: B

---

### 35. Which is safest for large datasets?

- A. load()
- B. get()
- C. Criteria pagination
- D. fetch all

 Answer: C

---

### 36. Difference between get() and load()

- A. get returns proxy
- B. load throws exception if not found
- C. get throws exception
- D. Both same

 Answer: B

---

### 37. Which mapping creates join table?

- A. @OneToMany
- B. @ManyToOne
- C. @ManyToMany
- D. @Embedded

 Answer: C

---

### **38. Which breaks Hibernate portability?**

- A. HQL
- B. Criteria API
- C. Native SQL
- D. Annotations

 **Answer:** C

---

### **39. Which improves performance most?**

- A. Eager loading
- B. Lazy loading
- C. No cache
- D. Multiple sessions

 **Answer:** B

---

### **40. Which is NOT entity lifecycle state?**

- A. transient
- B. persistent
- C. detached
- D. committed

 **Answer:** D

---

### **41. Which handles DB rollback?**

`tx.rollback();`

- A. Session
- B. Transaction
- C. Configuration
- D. Query

 **Answer:** B

---

### **42. Which is correct HQL?**

`from Employee e where e.salary > 50000`

- A. Uses table name
- B. Uses column name
- C. Uses class & field
- D. Invalid

 **Answer:** C

---

#### **43. Which layer should use Hibernate API?**

- A. Controller
- B. JSP
- C. DAO
- D. Browser

 **Answer:** C

---

#### **44. Which causes memory leak?**

- A. Closing SessionFactory repeatedly
- B. Not closing Session
- C. Using HQL
- D. Using Criteria

 **Answer:** B

---

#### **45. Hibernate + Servlet + JSP architecture follows**

- A. Monolithic
- B. 2-tier
- C. MVC
- D. MVP

 **Answer:** C

---

## **Sessions 14, 15, 16 & 17**

### **◆ EASY LEVEL MCQs (1–30)**

---

## **1. Spring Framework is mainly used for**

- A. UI development
- B. Enterprise application development
- C. Database creation
- D. OS development

 **Answer:** B

---

## **2. Spring is based on which core principle?**

- A. Tight coupling
- B. Inheritance
- C. IoC
- D. Multithreading

 **Answer:** C

---

## **3. IoC stands for**

- A. Instance of Class
- B. Inversion of Control
- C. Interface of Class
- D. Injection of Code

 **Answer:** B

---

## **4. Which container manages Spring beans?**

- A. JVM
- B. Servlet container
- C. IoC container
- D. Web container

 **Answer:** C

---

## **5. Which is a Spring IoC container?**

- A. BeanFactory
- B. ApplicationContext

- C. Both
- D. None

 **Answer:** C

---

## **6. Dependency Injection means**

- A. Creating object manually
- B. Object depends on itself
- C. Injecting dependencies externally
- D. Static binding

 **Answer:** C

---

## **7. Which annotation marks a Spring bean?**

- A. @Service
- B. @Component
- C. @Controller
- D. All

 **Answer:** D

---

## **8. Which annotation is used in Spring MVC controller?**

- A. @Component
- B. @Service
- C. @Controller
- D. @Repository

 **Answer:** C

---

## **9. Spring MVC follows which pattern?**

- A. MVC
- B. Singleton
- C. DAO
- D. Factory

 **Answer:** A

---

## **10. DispatcherServlet acts as**

- A. Model
- B. View
- C. Front Controller
- D. DAO

 **Answer:** C

---

## **11. Which XML file configures DispatcherServlet (traditional)?**

- A. web.xml
- B. pom.xml
- C. context.xml
- D. server.xml

 **Answer:** A

---

## **12. Which annotation maps HTTP requests?**

- A. @Controller
- B. @RequestMapping
- C. @Autowired
- D. @Bean

 **Answer:** B

---

## **13. Spring beans are**

- A. POJO objects
- B. Servlets
- C. JSPs
- D. EJBs

 **Answer:** A

---

## **14. Default bean scope is**

- A. prototype
- B. request
- C. session
- D. singleton

 Answer: D

---

### 15. Which annotation performs dependency injection?

- A. @Bean
- B. @Autowired
- C. @Qualifier
- D. @Scope

 Answer: B

---

### 16. Spring MVC Model is used to

- A. Store DB data
- B. Transfer data to view
- C. Handle request
- D. Map URL

 Answer: B

---

### 17. Which class resolves JSP views?

- A. HandlerMapping
- B. ViewResolver
- C. DispatcherServlet
- D. Model

 Answer: B

---

### 18. Which is NOT a Spring module?

- A. Core
- B. MVC
- C. ORM
- D. Servlet

 Answer: D

---

### 19. Thymeleaf is

- A. ORM framework
- B. View technology
- C. Web server
- D. DB tool

 **Answer:** B

---

## 20. Which scope creates new bean every time?

- A. singleton
- B. prototype
- C. session
- D. request

 **Answer:** B

---

## 21. Which annotation defines bean scope?

`@Scope("prototype")`

- A. `@Bean`
- B. `@Component`
- C. `@Scope`
- D. `@Autowired`

 **Answer:** C

---

## 22. Which is Front Controller in Spring MVC?

- A. Controller
- B. ViewResolver
- C. DispatcherServlet
- D. Model

 **Answer:** C

---

## 23. Which module supports validation?

- A. spring-core
- B. spring-context
- C. spring-webmvc
- D. spring-jdbc

 Answer: C

---

## 24. Spring Validation is based on

- A. JDBC
- B. JSR-303 / JSR-380
- C. JSTL
- D. JSP

 Answer: B

---

## 25. Which annotation validates input?

- A. @Valid
- B. @Autowired
- C. @ModelAttribute
- D. @RequestParam

 Answer: A

---

## 26. i18n stands for

- A. internalization
- B. internationalization
- C. integration
- D. interpretation

 Answer: B

---

## 27. Which file stores localized messages?

- A. messages.properties
- B. web.xml
- C. pom.xml
- D. context.xml

 Answer: A

---

## 28. Which bean handles message resolution?

- A. ViewResolver
- B. MessageSource
- C. HandlerMapping
- D. Validator

 **Answer:** B

---

## **29. File upload in Spring MVC uses**

- A. MultipartResolver
- B. FileResolver
- C. UploadManager
- D. IOManager

 **Answer:** A

---

## **30. Spring MVC without Spring Boot uses**

- A. XML + annotations
- B. Java config only
- C. Boot auto config
- D. YAML

 **Answer:** A

---

## **◆ MEDIUM LEVEL MCQs (31–60)**

### **31. Difference between BeanFactory & ApplicationContext**

- A. Same
- B. Context supports more features
- C. BeanFactory is faster
- D. Context doesn't support DI

 **Answer:** B

---

### **32. Which annotation avoids XML config?**

- A. @Controller
- B. @ComponentScan
- C. @Autowired
- D. @Scope

 **Answer:** B

---

### 33. Which autowiring is default?

- A. byName
- B. byType
- C. constructor
- D. none

 **Answer:** B

---

### 34. Identify injection

```
@Autowired  
private UserService service;
```

- A. Constructor
- B. Setter
- C. Field
- D. Manual

 **Answer:** C

---

### 35. Which avoids ambiguity in autowiring?

- A. @Autowired
- B. @Primary
- C. @Qualifier
- D. Both B and C

 **Answer:** D

---

### 36. HandlerMapping decides

- A. Which view to render
- B. Which controller handles request

- C. Bean creation
- D. Validation

 **Answer:** B

---

### **37. ModelAndView contains**

- A. Model only
- B. View only
- C. Both model & view
- D. Controller

 **Answer:** C

---

### **38. Which is correct controller method?**

```
@RequestMapping( "/home" )  
public String home(Model model)
```

- A. Invalid
- B. Valid
- C. Missing return
- D. Missing request

 **Answer:** B

---

### **39. What breaks Spring MVC?**

- A. Controller returns view name
- B. Business logic in controller
- C. DAO usage
- D. Model usage

 **Answer:** B

---

### **40. Which scope is web-aware?**

- A. singleton
- B. prototype
- C. request
- D. Both C and session

 Answer: D

---

#### 41. Which annotation binds form data?

- A. @RequestParam
- B. @ModelAttribute
- C. @PathVariable
- D. @RequestBody

 Answer: B

---

#### 42. Which annotation maps path variable?

```
@GetMapping("/user/{id}")
```

- A. @RequestParam
- B. @PathVariable
- C. @RequestBody
- D. @ModelAttribute

 Answer: B

---

#### 43. Spring MVC validation errors are stored in

- A. Model
- B. BindingResult
- C. Session
- D. Request

 Answer: B

---

#### 44. Which method supports POST?

```
@PostMapping("/save")
```

- A. GET
- B. POST
- C. PUT
- D. DELETE

 Answer: B

---

#### **45. Which config is mandatory for file upload?**

- A. MultipartResolver bean
- B. ViewResolver
- C. HandlerMapping
- D. Model

 **Answer:** A

---

#### **46. Which annotation enables i18n?**

- A. @EnableWebMvc
- B. @Configuration
- C. MessageSource bean
- D. @ComponentScan

 **Answer:** C

---

#### **47. Which bean resolves locale?**

- A. LocaleResolver
- B. MessageSource
- C. HandlerMapping
- D. Validator

 **Answer:** A

---

#### **48. Thymeleaf advantage**

- A. No server side
- B. Natural templates
- C. Only HTML
- D. No MVC

 **Answer:** B

---

#### **49. Which is true about singleton beans?**

- A. Thread-safe by default
- B. One per container

- C. One per request
- D. One per JVM globally

 **Answer:** B

---

### **50. Which layer accesses Hibernate?**

- A. Controller
- B. View
- C. DAO
- D. DispatcherServlet

 **Answer:** C

---

### **51. Which annotation marks DAO layer?**

- A. @Service
- B. @Component
- C. @Repository
- D. @Controller

 **Answer:** C

---

### **52. Which exception translation is provided by**

- A. @Service
- B. @Repository
- C. @Controller
- D. @Bean

 **Answer:** B

---

### **53. Which avoids hard-coded view paths?**

- A. HandlerMapping
- B. ViewResolver
- C. Controller
- D. Model

 **Answer:** B

---

#### **54. Which is NOT bean scope?**

- A. singleton
- B. prototype
- C. global
- D. request

 **Answer:** C

---

#### **55. Spring MVC without Boot requires**

- A. DispatcherServlet mapping
- B. ApplicationContext
- C. ViewResolver
- D. All

 **Answer:** D

---

#### **56. Which is safer for validation?**

- A. Manual if-else
- B. @Valid
- C. JavaScript only
- D. DB constraint only

 **Answer:** B

---

#### **57. Which file stores multiple locales?**

- A. messages\_en.properties
- B. messages\_fr.properties
- C. messages.properties
- D. All

 **Answer:** D

---

#### **58. Which is NOT Spring MVC component?**

- A. Model
- B. ViewResolver
- C. DispatcherServlet
- D. SessionFactory

 Answer: D

---

## 59. Which design pattern Spring MVC uses?

- A. Singleton
- B. Factory
- C. Front Controller
- D. Adapter

 Answer: C

---

## 60. Which improves loose coupling?

- A. Inheritance
- B. IoC
- C. Static methods
- D. Tight binding

 Answer: B

---

# HARD LEVEL MCQs (61–90)

---

## 61. Why singleton beans may cause issues?

- A. Performance
- B. Shared mutable state
- C. Memory
- D. GC

 Answer: B

---

## 62. Best practice for controller logic

- A. Business logic inside
- B. Call service layer
- C. JDBC inside
- D. Hibernate inside

 Answer: B

---

### **63. Which breaks IoC principle?**

- A. @Autowired
- B. new Object() inside bean
- C. @Component
- D. @Qualifier

 **Answer:** B

---

### **64. Which is correct MVC flow?**

- A. Client → JSP → Controller
- B. Client → DispatcherServlet → Controller → View
- C. Browser → DAO → DB
- D. JSP → DispatcherServlet

 **Answer:** B

---

### **65. Which ensures portability?**

- A. XML config
- B. Annotations
- C. Spring abstractions
- D. JSP

 **Answer:** C

---

### **66. Which causes circular dependency issue?**

- A. Constructor injection
- B. Setter injection
- C. Field injection
- D. All

 **Answer:** A

---

### **67. Which resolves ambiguity at runtime?**

- A. @Autowired
- B. @Primary

- C. @Qualifier
- D. @Component

 **Answer:** C

---

## 68. Which is safer for file upload?

- A. No size limit
- B. Multipart config with limits
- C. Direct File IO
- D. Client-side validation only

 **Answer:** B

---

## 69. Which breaks MVC separation?

- A. JSP using EL
- B. Controller selecting view
- C. JSP accessing DB
- D. DAO returning entity

 **Answer:** C

---

## 70. Which supports multilingual UI?

- A. Validation
- B. i18n
- C. IoC
- D. MVC

 **Answer:** B

---

## 71. Which bean is created first?

- A. prototype
- B. singleton
- C. request
- D. session

 **Answer:** B

---

## 72. Why ApplicationContext preferred?

- A. Lazy loading only
- B. More enterprise features
- C. Less memory
- D. No DI

 **Answer:** B

---

## 73. Which annotation enables MVC?

@EnableWebMvc

- A. @Configuration
- B. @Component
- C. @EnableWebMvc
- D. @Controller

 **Answer:** C

---

## 74. Which avoids hard dependency?

- A. new keyword
- B. Interfaces + DI
- C. Static methods
- D. Final classes

 **Answer:** B

---

## 75. Which is thread-safe by default?

- A. Controller
- B. Singleton bean
- C. Stateless service
- D. Session bean

 **Answer:** C

---

## 76. Which leads to memory leak?

- A. Prototype beans
- B. Session-scoped beans not cleaned

- C. Local variables
- D. Method parameters

 **Answer:** B

---

### 77. Which validation error handling is correct?

```
public String save(@Valid User u, BindingResult br)
```

- A. Invalid
- B. Valid
- C. Missing annotation
- D. Wrong order

 **Answer:** B

---

### 78. Which is best for large applications?

- A. JSP-only
- B. Servlet-only
- C. Spring MVC layered
- D. Scriptlets

 **Answer:** C

---

### 79. Which improves testability most?

- A. Static methods
- B. IoC + DI
- C. JSP logic
- D. XML only

 **Answer:** B

---

### 80. Which supports REST later easily?

- A. JSP
- B. Servlets
- C. Spring MVC
- D. JSTL

 **Answer:** C

---

## **81. Which is required for i18n switching?**

- A. LocaleResolver
- B. HandlerMapping
- C. ViewResolver
- D. Model

 **Answer:** A

---

## **82. Which is true about DispatcherServlet?**

- A. Created per request
- B. Singleton
- C. Thread-safe
- D. Client side

 **Answer:** B

---

## **83. Which avoids hard coding text?**

- A. JSP
- B. Properties files
- C. Java code
- D. HTML

 **Answer:** B

---

## **84. Which is best place for validation logic?**

- A. JSP
- B. Controller
- C. Service layer
- D. Entity + validator

 **Answer:** D

---

## **85. Which Spring feature replaces Factory pattern?**

- A. IoC container
- B. MVC

- C. JDBC
- D. ORM

 **Answer:** A

---

### **86. Which is NOT Spring Core feature?**

- A. DI
- B. AOP
- C. IoC
- D. JSP

 **Answer:** D

---

### **87. Which design principle Spring promotes?**

- A. Tight coupling
- B. Low cohesion
- C. Loose coupling
- D. High dependency

 **Answer:** C

---

### **88. Which avoids duplicate bean creation?**

- A. prototype
- B. singleton
- C. request
- D. session

 **Answer:** B

---

### **89. Which improves maintainability?**

- A. Scriptlets
- B. Layered architecture
- C. Hard-coded values
- D. Static objects

 **Answer:** B

---

## **90. Spring MVC + JSP architecture is**

- A. Monolithic
- B. 2-tier
- C. MVC-based layered
- D. Client-side MVC

 **Answer:** C

## **Sessions 18, 19 & 20**

### **◆ EASY LEVEL MCQs (1–25)**

---

#### **1. Spring Boot is built on top of**

- A. Servlet
- B. JSP
- C. Spring Framework
- D. Hibernate

 **Answer:** C

---

#### **2. Main goal of Spring Boot is**

- A. Replace Spring
- B. Simplify Spring configuration
- C. Replace Java
- D. Replace Maven

 **Answer:** B

---

#### **3. Spring Boot eliminates**

- A. Java
- B. XML configuration
- C. MVC
- D. Controllers

 **Answer:** B

---

#### **4. Default embedded server in Spring Boot**

- A. JBoss
- B. GlassFish
- C. Tomcat
- D. WebLogic

 **Answer:** C

---

#### **5. Which annotation marks a Spring Boot application?**

`@SpringBootApplication`

- A. `@EnableBoot`
- B. `@SpringApplication`
- C. `@SpringBootApplication`
- D. `@Boot`

 **Answer:** C

---

#### **6. Spring Boot follows which principle?**

- A. Tight coupling
- B. Convention over configuration
- C. Manual configuration
- D. Static binding

 **Answer:** B

---

#### **7. Which file manages dependencies in Maven?**

- A. build.xml
- B. settings.xml
- C. pom.xml
- D. manifest.mf

 **Answer:** C

---

#### **8. Maven stands for**

- A. Model Application Versioning Engine
- B. Management of Versioned Elements

- C. Project Management Tool
- D. Modular Application Versioning

 **Answer:** B

---

## 9. Default packaging type of Spring Boot

- A. WAR
- B. EAR
- C. JAR
- D. ZIP

 **Answer:** C

---

## 10. Which command runs Spring Boot app?

`mvn spring-boot:run`

- A. mvn run
- B. java run
- C. mvn spring
- D. mvn spring-boot:run

 **Answer:** D

---

## 11. Which annotation creates REST controller?

- A. @Controller
- B. @Service
- C. @RestController
- D. @Repository

 **Answer:** C

---

## 12. Which annotation maps HTTP GET?

- A. @PostMapping
- B. @PutMapping
- C. @GetMapping
- D. @RequestMapping

 **Answer:** C

---

### **13. Which layer handles business logic?**

- A. Controller
- B. Service
- C. Repository
- D. View

 **Answer:** B

---

### **14. Spring Boot auto configuration is enabled by**

- A. @EnableMVC
- B. @SpringBootApplication
- C. @Configuration
- D. @AutoConfig

 **Answer:** B

---

### **15. Which dependency is required for web app?**

- A. spring-boot-starter-core
- B. spring-boot-starter-web
- C. spring-boot-starter-test
- D. spring-boot-starter-jdbc

 **Answer:** B

---

### **16. Which file stores Spring Boot properties?**

- A. pom.xml
- B. web.xml
- C. application.properties
- D. config.xml

 **Answer:** C

---

### **17. Default port of Spring Boot**

- A. 3000
- B. 8080

- C. 8000
- D. 9090

 **Answer:** B

---

## **18. Thymeleaf is**

- A. ORM framework
- B. View template engine
- C. Build tool
- D. Server

 **Answer:** B

---

## **19. Which annotation injects dependency?**

- A. @Bean
- B. @Autowired
- C. @Component
- D. @Inject

 **Answer:** B

---

## **20. Which CRUD operation reads data?**

- A. Create
- B. Read
- C. Update
- D. Delete

 **Answer:** B

---

## **21. Static data means**

- A. Stored in DB
- B. Hardcoded data
- C. File-based
- D. Cloud data

 **Answer:** B

---

## **22. Which annotation marks service class?**

- A. @Controller
- B. @Service
- C. @Component
- D. @Bean

 **Answer:** B

---

## **23. Spring Boot starter means**

- A. Plugin
- B. Bundle of dependencies
- C. Server
- D. IDE

 **Answer:** B

---

## **24. Which tool resolves Maven dependencies?**

- A. JVM
- B. Maven Central
- C. Tomcat
- D. Eclipse

 **Answer:** B

---

## **25. Spring Boot reduces**

- A. Code quality
- B. Boilerplate code
- C. Performance
- D. Security

 **Answer:** B

---

## **◆ MEDIUM LEVEL MCQs (26–50)**

## **26. What does @SpringBootApplication combine?**

- A. @Controller + @Service
- B. @Configuration + @EnableAutoConfiguration + @ComponentScan
- C. @EnableMVC + @Bean
- D. @Service + @Repository

 **Answer:** B

---

## 27. Which dependency includes Tomcat?

`spring-boot-starter-web`

- A. Core
- B. MVC
- C. Embedded server
- D. ORM

 **Answer:** C

---

## 28. Which is valid controller method?

```
@GetMapping("/hello")
public String hello() {
    return "hello";
}
```

- A. Invalid
- B. Valid
- C. Missing annotation
- D. Missing parameter

 **Answer:** B

---

## 29. Where does Spring Boot scan components by default?

- A. Whole project
- B. Package of main class & subpackages
- C. Only controller package
- D. Only config package

 **Answer:** B

---

### **30. Which annotation exposes JSON response?**

- A. @Controller
- B. @ResponseBody
- C. @RestController
- D. Both B and C

 **Answer:** D

---

### **31. Which Maven scope is default?**

- A. test
- B. provided
- C. compile
- D. runtime

 **Answer:** C

---

### **32. How to change port to 9090?**

`server.port=9090`

- A. web.xml
- B. pom.xml
- C. application.properties
- D. Java class

 **Answer:** C

---

### **33. Which annotation binds URL param?**

`@GetMapping("/user/{id}")`

- A. @RequestParam
- B. @PathVariable
- C. @RequestBody
- D. @ModelAttribute

 **Answer:** B

---

### **34. Which breaks layered architecture?**

- A. Controller → Service
- B. Service → Repository
- C. Controller → Repository
- D. Repository → DB

 **Answer:** C

---

### **35. Which CRUD operation uses POST?**

- A. Create
- B. Read
- C. Update
- D. Delete

 **Answer:** A

---

### **36. Which annotation handles POST?**

`@PostMapping("/save")`

- A. `@GetMapping`
- B. `@PutMapping`
- C. `@PostMapping`
- D. `@DeleteMapping`

 **Answer:** C

---

### **37. Which file defines project coordinates?**

- A. `settings.xml`
- B. `pom.xml`
- C. `application.properties`
- D. `.classpath`

 **Answer:** B

---

### **38. Maven coordinates include**

- A. `groupId`
- B. `artifactId`
- C. `version`
- D. All

 Answer: D

---

### 39. Which is correct Thymeleaf expression?

<p th:text="\${name}"></p>

- A. Invalid
- B. Valid
- C. JSP EL
- D. JSTL

 Answer: B

---

### 40. Which annotation maps form data?

- A. @RequestParam
- B. @ModelAttribute
- C. @PathVariable
- D. @RequestBody

 Answer: B

---

### 41. Which dependency is for Thymeleaf?

- A. spring-boot-starter-web
- B. spring-boot-starter-thymeleaf
- C. spring-boot-starter-test
- D. spring-boot-starter-data-jpa

 Answer: B

---

### 42. Which starter is NOT used here?

- A. web
- B. thymeleaf
- C. data-jpa
- D. test

 Answer: C

---

#### **43. How is static CRUD data usually stored?**

- A. Database
- B. List/Map in Service
- C. File system
- D. Session

 **Answer:** B

---

#### **44. Which returns view name?**

- A. @RestController
- B. @Controller
- C. @Service
- D. @Repository

 **Answer:** B

---

#### **45. Which annotation makes bean discoverable?**

- A. @Enable
- B. @Component
- C. @Bean
- D. @Scan

 **Answer:** B

---

#### **46. Which breaks auto-configuration?**

- A. Removing starter
- B. Overriding config
- C. Excluding AutoConfig
- D. All

 **Answer:** D

---

#### **47. Which annotation excludes auto config?**

`@SpringBootApplication(exclude = DataSourceAutoConfiguration.class)`

- A. @Exclude
- B. exclude attribute

- C. `@Disable`
- D. `@Ignore`

 **Answer:** B

---

#### **48. Which improves testability?**

- A. Static methods
- B. DI
- C. Hardcoding
- D. XML only

 **Answer:** B

---

#### **49. Which is true about Spring Boot JAR?**

- A. Needs external server
- B. Standalone executable
- C. Only WAR
- D. No Tomcat

 **Answer:** B

---

#### **50. Which layer returns static data?**

- A. Controller
- B. Service
- C. Repository
- D. View

 **Answer:** B

---

## **HARD LEVEL MCQs (51–75)**

---

#### **51. Why Spring Boot preferred over Spring MVC?**

- A. Faster JVM
- B. Auto configuration

- C. Better SQL
- D. Better UI

 **Answer:** B

---

## 52. Which breaks Spring Boot philosophy?

- A. Convention over config
- B. Heavy XML
- C. Starters
- D. Embedded server

 **Answer:** B

---

## 53. Identify issue

```
@RestController  
public class TestController {  
    private List<User> users = new ArrayList<>();  
}
```

- A. Thread safety
- B. Compilation error
- C. Mapping error
- D. No issue

 **Answer:** A

---

## 54. Which scope avoids shared mutable state?

- A. singleton
- B. prototype
- C. session
- D. application

 **Answer:** B

---

## 55. Which change requires rebuild?

- A. HTML
- B. Thymeleaf

- C. Java code
- D. CSS

 **Answer:** C

---

### **56. Which is safer CRUD design?**

- A. Controller holds data
- B. Service holds data
- C. View holds data
- D. Config holds data

 **Answer:** B

---

### **57. Which is correct flow?**

- A. Browser → Service
- B. Browser → Controller → Service
- C. JSP → Service
- D. DB → Controller

 **Answer:** B

---

### **58. Which is NOT Spring Boot benefit?**

- A. Auto config
- B. Embedded server
- C. Reduced boilerplate
- D. Mandatory XML

 **Answer:** D

---

### **59. Which annotation disables controller response view?**

- A. @Controller
- B. @ResponseBody
- C. @Service
- D. @Component

 **Answer:** B

---

## 60. Which avoids hardcoded URLs in Thymeleaf?

`th:href="@{/users}"`

- A. EL
- B. Thymeleaf URL expression
- C. JSP
- D. JSTL

 Answer: B

---

## 61. Which improves maintainability most?

- A. Static data in controller
- B. Layered architecture
- C. Hardcoded strings
- D. No service layer

 Answer: B

---

## 62. Which starter brings JSON support?

- A. web
- B. thymeleaf
- C. test
- D. jdbc

 Answer: A

---

## 63. Which is true about auto-configuration?

- A. Always enabled
- B. Conditional
- C. Manual only
- D. XML based

 Answer: B

---

## 64. Which annotation handles validation later easily?

- A. @Valid
- B. @Autowired

- A. @Bean
- D. @Scope

 **Answer:** A

---

## 65. Which is better for CRUD expansion later?

- A. Static List
- B. In-memory Map + Service
- C. Controller logic
- D. View logic

 **Answer:** B

---

## 66. Which command builds executable JAR?

`mvn clean package`

- A. run
- B. build
- C. package
- D. deploy

 **Answer:** C

---

## 67. Which violates IoC?

- A. @Autowired
- B. Constructor injection
- C. new Service() inside controller
- D. @Service

 **Answer:** C

---

## 68. Which annotation defines bean explicitly?

`@Bean`

- A. @Component
- B. @Bean
- C. @Service
- D. @Controller

 **Answer:** B

---

### **69. Which improves loose coupling?**

- A. Interfaces
- B. DI
- C. Both
- D. None

 **Answer:** C

---

### **70. Which handles mapping conflicts?**

- A. DispatcherServlet
- B. HandlerMapping
- C. ViewResolver
- D. Model

 **Answer:** B

---

### **71. Which approach scales best?**

- A. Controller-heavy
- B. Service-centric
- C. View-centric
- D. Static logic

 **Answer:** B

---

### **72. Which is safest for concurrent users?**

- A. Shared List in Controller
- B. Stateless Service
- C. Global variables
- D. Static fields

 **Answer:** B

---

### **73. Which prepares app for DB integration later?**

- A. CRUD in controller
- B. Service + DTO separation
- C. Thymeleaf logic
- D. Hardcoded data

 **Answer:** B

---

#### **74. Which makes Spring Boot production ready?**

- A. Embedded Tomcat
- B. Auto config
- C. Actuator (later)
- D. Maven

 **Answer:** C

---

#### **75. Spring Boot CRUD + Thymeleaf follows**

- A. Monolithic
- B. MVC layered architecture
- C. Client-side MVC
- D. Scriptlet based

 **Answer:** B

### **◆ EASY LEVEL MCQs (1–20)**

---

#### **1. Spring Data JPA is mainly used to**

- A. Build UI
- B. Simplify data access layer
- C. Replace Hibernate
- D. Handle HTTP requests

 **Answer:** B

---

#### **2. Spring Data JPA works on top of**

- A. JDBC
- B. Servlet
- C. JPA
- D. JSP

 **Answer:** C

---

### **3. Which interface provides basic CRUD operations?**

- A. Repository
- B. CrudRepository
- C. JpaRepository
- D. PagingRepository

 **Answer:** B

---

### **4. JpaRepository is a sub-interface of**

- A. Repository
- B. CrudRepository
- C. PagingAndSortingRepository
- D. Both B and C

 **Answer:** D

---

### **5. Which annotation marks repository layer?**

- A. @Service
- B. @Component
- C. @Repository
- D. @Entity

 **Answer:** C

---

### **6. Which method saves entity?**

`save(entity)`

- A. persist()
- B. add()
- C. save()
- D. insert()

 Answer: C

---

## 7. Which method fetches all records?

- A. find()
- B. findAll()
- C. get()
- D. fetch()

 Answer: B

---

## 8. Which method deletes record by id?

- A. delete()
- B. remove()
- C. deleteById()
- D. deleteEntity()

 Answer: C

---

## 9. Spring Data JPA eliminates

- A. Entity classes
- B. SQL writing
- C. Repository implementation
- D. Database

 Answer: C

---

## 10. Which annotation enables JPA repositories?

- A. @EnableMVC
- B. @EnableJpaRepositories
- C. @EnableRepositories
- D. @EnableJPA

 Answer: B

---

## 11. Query methods are

- A. XML based
- B. Annotation based
- C. Method-name based
- D. SQL only

 **Answer:** C

---

## 12. Which is a valid query method?

`findByName(String name)`

- A. Invalid
- B. Valid
- C. Needs @Query
- D. Compile error

 **Answer:** B

---

## 13. Spring Data JPA uses

- A. Reflection
- B. Proxy classes
- C. Bytecode generation
- D. All

 **Answer:** D

---

## 14. Which annotation defines custom query?

- A. @NamedQuery
- B. @Query
- C. @CustomQuery
- D. @SQL

 **Answer:** B

---

## 15. Which return type supports optional result?

- A. Entity
- B. List
- C. Optional
- D. Object

 Answer: C

---

## 16. Which repository is most feature-rich?

- A. Repository
- B. CrudRepository
- C. JpaRepository
- D. None

 Answer: C

---

## 17. Which method checks record existence?

- A. isPresent()
- B. exists()
- C. existsById()
- D. check()

 Answer: C

---

## 18. Spring Data repositories are

- A. Classes
- B. Interfaces
- C. Abstract classes
- D. Beans only

 Answer: B

---

## 19. Which feature supports pagination?

- A. CrudRepository
- B. Repository
- C. JpaRepository
- D. JDBC

 Answer: C

---

## 20. Spring Data JPA supports

- A. JPQL
- B. Native SQL
- C. Both
- D. Neither

 Answer: C

---

## ◆ MEDIUM LEVEL MCQs (21–40)

---

### 21. Difference between CrudRepository & JpaRepository

- A. Same
- B. JpaRepository has more methods
- C. CrudRepository supports pagination
- D. CrudRepository is faster

 Answer: B

---

### 22. Which method supports sorting?

`findAll(Sort sort)`

- A. CrudRepository
- B. JpaRepository
- C. Repository
- D. JDBC

 Answer: B

---

### 23. Which is correct repository declaration?

`public interface UserRepo extends JpaRepository<User, Long>`

- A. Invalid
- B. Valid
- C. Needs implementation
- D. Compile error

 Answer: B

---

## 24. Which keyword creates conditional query?

```
findByAgeGreaterThan(int age)
```

- A. GreaterThan
- B. Bigger
- C. After
- D. More

 Answer: A

---

## 25. Which query method finds multiple records?

- A. findOne
- B. findById
- C. findAllByStatus
- D. getOne

 Answer: C

---

## 26. What is wrong here?

```
findBySalary(int salary)
```

- A. Wrong type
- B. Needs @Query
- C. Field must exist in entity
- D. Syntax error

 Answer: C

---

## 27. Which is correct JPQL?

```
@Query("select u from User u where u.age > 30")
```

- A. Uses table name
- B. Uses column name
- C. Uses entity & fields
- D. Invalid

 Answer: C

---

## 28. Default behavior of save()

- A. Always insert
- B. Always update
- C. Insert or update
- D. Delete

 Answer: C

---

## 29. Which annotation marks modifying query?

@Modifying

- A. @Update
- B. @Transactional
- C. @Modifying
- D. @Change

 Answer: C

---

## 30. Which is mandatory with @Modifying?

- A. @Autowired
- B. @Transactional
- C. @Entity
- D. @Service

 Answer: B

---

## 31. Which repository method returns count?

- A. size()
- B. count()
- C. length()
- D. total()

 Answer: B

---

## 32. Which supports delete by condition?

`deleteByStatus(String status)`

- A. Invalid
- B. Valid
- C. Needs @Query
- D. Runtime error

 **Answer:** B

---

### 33. Which method supports pagination?

`findAll(Pageable pageable)`

- A. CrudRepository
- B. JpaRepository
- C. Repository
- D. Hibernate

 **Answer:** B

---

### 34. Pageable is provided by

- A. java.util
- B. org.springframework.data.domain
- C. javax.persistence
- D. hibernate

 **Answer:** B

---

### 35. Which is correct PageRequest?

`PageRequest.of(0, 10)`

- A. Invalid
- B. Valid
- C. Deprecated
- D. Compile error

 **Answer:** B

---

### 36. Which breaks Spring Data abstraction?

- A. Query methods
- B. @Query JPQL

- C. Native SQL
- D. JpaRepository

 **Answer:** C

---

### 37. Which is safer return type?

`Optional<User>`

- A. User
- B. Object
- C. Optional
- D. List

 **Answer:** C

---

### 38. Which is correct native query?

`@Query(value="select * from users", nativeQuery=true)`

- A. Invalid
- B. Valid
- C. JPQL
- D. HQL

 **Answer:** B

---

### 39. Repository layer should be accessed by

- A. Controller
- B. View
- C. Service
- D. Browser

 **Answer:** C

---

### 40. Which improves maintainability?

- A. Writing SQL everywhere
- B. Query methods
- C. JDBC in controller
- D. Native queries only

 Answer: B

---

## HARD LEVEL MCQs (41–60)

---

### 41. Which causes runtime error?

`findByNonExistingField(String val)`

- A. Compile time error
- B. Runtime error
- C. Ignored
- D. Valid

 Answer: B

---

### 42. Which is best for complex queries?

- A. Query methods
- B. @Query JPQL
- C. Native SQL everywhere
- D. CrudRepository

 Answer: B

---

### 43. Which repository method loads entity lazily?

- A. findById
- B. getOne
- C. findAll
- D. save

 Answer: B

---

### 44. getOne() vs findById()

- A. Same
- B. getOne returns proxy
- C. findById throws exception
- D. Both eager

 Answer: B

---

#### 45. Which leads to LazyInitializationException?

- A. findById inside transaction
- B. getOne outside transaction
- C. save entity
- D. count()

 Answer: B

---

#### 46. Which annotation is optional for repository?

- A. @Repository
- B. @Entity
- C. @Id
- D. @Table

 Answer: A

---

#### 47. Which breaks layered architecture?

- A. Service → Repository
- B. Controller → Repository
- C. Controller → Service
- D. Repository → DB

 Answer: B

---

#### 48. Which ensures transaction consistency?

- A. @Autowired
- B. @Transactional
- C. @Modifying
- D. @Query

 Answer: B

---

#### 49. Which repository method deletes all records?

- A. delete()
- B. removeAll()
- C. deleteAll()
- D. clear()

 **Answer:** C

---

## 50. Which is safest update approach?

- A. Native SQL
- B. @Modifying JPQL
- C. Entity modification + save
- D. JDBC

 **Answer:** C

---

## 51. Which causes performance issue?

- A. Pagination
- B. Lazy loading
- C. Fetching all records
- D. Query methods

 **Answer:** C

---

## 52. Which improves testability?

- A. Hardcoded SQL
- B. Repository abstraction
- C. Native queries
- D. JDBC

 **Answer:** B

---

## 53. Which avoids NullPointerException?

`Optional<User> u`

- A. User
- B. Object
- C. Optional
- D. EntityManager

 Answer: C

---

#### 54. Which annotation is NOT from Spring Data JPA?

- A. @Query
- B. @Modifying
- C. @Entity
- D. @EnableJpaRepositories

 Answer: C

---

#### 55. Which is best practice?

- A. Repositories in controller
- B. Repository → Service → Controller
- C. JDBC + JPA mixed
- D. Native SQL everywhere

 Answer: B

---

#### 56. Which ensures DB independence?

- A. Native query
- B. JPQL
- C. SQL scripts
- D. Stored procedures

 Answer: B

---

#### 57. Which is evaluated at runtime?

- A. Query methods
- B. Repository interface
- C. Entity class
- D. DB schema

 Answer: A

---

#### 58. Which avoids boilerplate code most?

- A. JDBC
- B. Hibernate
- C. Spring Data JPA
- D. SQL

 **Answer:** C

---

### **59. Which is mandatory in repository generics?**

`JpaRepository<T, ID>`

- A. Entity class
- B. Primary key type
- C. Both
- D. None

 **Answer:** C

---

### **60. Spring Data JPA + Spring Boot architecture follows**

- A. Monolithic
- B. MVC + layered
- C. Client-side MVC
- D. Scriptlet based

 **Answer:** B

## **◆ EASY LEVEL MCQs (1–15)**

---

### **1. AOP stands for**

- A. Application Oriented Programming
- B. Aspect Oriented Programming
- C. Advanced Object Programming
- D. Automated Operation Programming

 **Answer:** B

---

## **2. AOP is mainly used to**

- A. Write UI logic
- B. Handle database
- C. Handle cross-cutting concerns
- D. Replace OOP

 **Answer:** C

---

## **3. Which is a cross-cutting concern?**

- A. Business logic
- B. UI rendering
- C. Logging
- D. DAO logic

 **Answer:** C

---

## **4. Spring AOP is implemented using**

- A. Inheritance
- B. Reflection only
- C. Proxy mechanism
- D. Multithreading

 **Answer:** C

---

## **5. Which annotation marks an aspect class?**

`@Aspect`

- A. `@Component`
- B. `@Controller`
- C. `@Aspect`
- D. `@Service`

 **Answer:** C

---

## **6. Which annotation enables AOP in Spring?**

- A. `@EnableMVC`
- B. `@EnableAspectJAutoProxy`

- C. @EnableAOP
- D. @EnableProxy

 **Answer:** B

---

## 7. Advice is

- A. Code that executes at join point
- B. Target method
- C. Proxy object
- D. Bean definition

 **Answer:** A

---

## 8. Join point represents

- A. Method execution
- B. Class loading
- C. Bean creation
- D. JVM startup

 **Answer:** A

---

## 9. Which is NOT an advice type?

- A. Before
- B. After
- C. Around
- D. During

 **Answer:** D

---

## 10. Which advice runs before method execution?

- A. @After
- B. @Around
- C. @Before
- D. @AfterReturning

 **Answer:** C

---

## **11. Aspect is**

- A. Collection of advices
- B. Business class
- C. Controller
- D. DAO

 **Answer:** A

---

## **12. Pointcut defines**

- A. What to execute
- B. When to execute
- C. Where to execute
- D. How to execute

 **Answer:** C

---

## **13. Which package provides Spring AOP annotations?**

- A. org.springframework.web
- B. org.springframework.aop
- C. org.aspectj.lang.annotation
- D. javax.servlet

 **Answer:** C

---

## **14. Spring AOP works with**

- A. Classes only
- B. Interfaces only
- C. Method execution join points
- D. Field access

 **Answer:** C

---

## **15. AOP helps in**

- A. Tight coupling
- B. Code duplication
- C. Separation of concerns
- D. Reducing performance

 Answer: C

---

## ◆ MEDIUM LEVEL MCQs (16–30)

---

**16. Which advice runs after method execution (success or failure)?**

- A. @After
- B. @AfterReturning
- C. @AfterThrowing
- D. @Before

 Answer: A

---

**17. Which advice runs only if method returns successfully?**

- A. @After
- B. @AfterReturning
- C. @Around
- D. @Before

 Answer: B

---

**18. Which advice handles exceptions?**

- A. @After
- B. @Before
- C. @AfterThrowing
- D. @Around

 Answer: C

---

**19. Which advice can control method execution?**

- A. @Before
- B. @After
- C. @Around
- D. @AfterReturning

 Answer: C

---

## 20. Identify correct pointcut expression

`execution(* com.app.service.*.*(..))`

- A. Invalid
- B. Matches all service methods
- C. Matches only one method
- D. Compile error

 **Answer:** B

---

## 21. Which join points are supported in Spring AOP?

- A. Field access
- B. Constructor execution
- C. Method execution
- D. Exception handling

 **Answer:** C

---

## 22. Which annotation marks advice method?

`@Before("execution(...)")`

- A. `@Aspect`
- B. `@Pointcut`
- C. `@Before`
- D. `@EnableAOP`

 **Answer:** C

---

## 23. Which interface gives access to method details?

- A. `JoinPoint`
- B. `ProceedingJoinPoint`
- C. `AspectContext`
- D. `Proxy`

 **Answer:** A

---

## 24. Which is correct logging aspect declaration?

```
@Aspect  
@Component  
public class LoggingAspect { }
```

- A. Invalid
- B. Valid
- C. Missing method
- D. Compile error

 Answer: B

---

## 25. Which advice is best for logging request start & end?

- A. @Before
- B. @After
- C. @Around
- D. @AfterThrowing

 Answer: C

---

## 26. Which method continues target execution in @Around?

```
pjp.proceed();
```

- A. execute()
- B. run()
- C. proceed()
- D. invoke()

 Answer: C

---

## 27. What happens if proceed() is not called?

- A. Method executes twice
- B. Method never executes
- C. Exception thrown
- D. JVM crashes

 Answer: B

---

## 28. Which is correct for enabling AOP via Java config?

`@EnableAspectJAutoProxy`

- A. Controller
- B. Configuration class
- C. Aspect class
- D. Repository

 **Answer:** B

---

## 29. Which concern is ideal for AOP?

- A. Login business logic
- B. Validation logic
- C. Logging & security
- D. Data persistence

 **Answer:** C

---

## 30. Which breaks AOP?

- A. Public method
- B. Private method
- C. Method execution
- D. Proxy object

 **Answer:** B

---

# HARD LEVEL MCQs (31–45)

---

## 31. Why Spring AOP cannot intercept private methods?

- A. JVM limitation
- B. Proxy-based mechanism
- C. Annotation restriction
- D. Compilation issue

 **Answer:** B

---

### **32. Which proxy type is used by default?**

- A. CGLIB only
- B. JDK Dynamic Proxy
- C. ByteBuddy
- D. Reflection

 **Answer:** B

---

### **33. When does Spring use CGLIB proxy?**

- A. Always
- B. When class has interface
- C. When no interface present
- D. Never

 **Answer:** C

---

### **34. Which annotation forces CGLIB proxy?**

`@EnableAspectJAutoProxy(proxyTargetClass=true)`

- A. proxyTargetClass
- B. forceProxy
- C. useCglib
- D. enableProxy

 **Answer:** A

---

### **35. Identify issue**

```
@Service
public class UserService {
    private void save() { }
}
```

- A. Compilation error
- B. AOP cannot intercept save()
- C. save() not callable
- D. No issue

 **Answer:** B

---

### **36. Which causes advice NOT to run?**

- A. Method called internally within same class
- B. Public method
- C. Controller call
- D. Proxy invocation

 **Answer:** A

---

### **37. Best place to apply logging AOP**

- A. Controller only
- B. DAO only
- C. Service layer
- D. View layer

 **Answer:** C

---

### **38. Which breaks clean architecture?**

- A. Logging in aspect
- B. Logging in controller
- C. Logging in service using AOP
- D. Cross-cutting via AOP

 **Answer:** B

---

### **39. Which order is correct?**

- A. Pointcut → Advice → Aspect
- B. Aspect → Advice → Pointcut
- C. Advice → Aspect → Pointcut
- D. JoinPoint → Advice → Aspect

 **Answer:** A

---

### **40. Which improves maintainability most?**

- A. Logging code in every method
- B. Centralized logging using AOP

- C. Utility logging class
- D. Static logging methods

 **Answer:** B

---

#### **41. Which exception advice catches runtime exceptions?**

- A. @After
- B. @AfterReturning
- C. @AfterThrowing
- D. @Around

 **Answer:** C

---

#### **42. Which join point info gives method name?**

`joinPoint.getSignature().getName()`

- A. Target
- B. Signature
- C. Proceed
- D. Proxy

 **Answer:** B

---

#### **43. Which scenario is BAD for AOP?**

- A. Logging
- B. Security
- C. Business calculations
- D. Transaction management

 **Answer:** C

---

#### **44. Logging all controller requests is best done using**

- A. Filters
- B. Interceptors
- C. AOP
- D. Servlets

 **Answer:** C

---

## **45. Spring AOP + MVC application follows**

- A. Scriptlet architecture
- B. Monolithic
- C. MVC + AOP layered architecture
- D. Client-side MVC

 **Answer:** C

---

## **◆ EASY LEVEL MCQs (1–20)**

---

### **1. REST stands for**

- A. Remote Execution Service Technology
- B. Representational State Transfer
- C. Resource State Transfer
- D. Reliable Service Technique

 **Answer:** B

---

### **2. REST is based on**

- A. HTTP protocol
- B. FTP protocol
- C. SMTP protocol
- D. TCP only

 **Answer:** A

---

### **3. RESTful services mainly work with**

- A. Resources
- B. Classes
- C. Threads
- D. Sessions

 **Answer:** A

---

#### **4. Which data format is commonly used in REST?**

- A. XML only
- B. JSON only
- C. JSON and XML
- D. Binary

 **Answer:** C

---

#### **5. REST services are**

- A. Stateful
- B. Stateless
- C. Session-based
- D. Stateful by default

 **Answer:** B

---

#### **6. Which annotation creates REST controller in Spring Boot?**

`@RestController`

- A. `@Controller`
- B. `@Service`
- C. `@RestController`
- D. `@Repository`

 **Answer:** C

---

#### **7. Which HTTP method retrieves data?**

- A. POST
- B. PUT
- C. GET
- D. DELETE

 **Answer:** C

---

#### **8. Which HTTP method creates resource?**

- A. GET
- B. POST
- C. PUT
- D. DELETE

 Answer: B

---

## 9. Which HTTP method updates resource completely?

- A. POST
- B. PUT
- C. GET
- D. PATCH

 Answer: B

---

## 10. Which HTTP method deletes resource?

- A. PUT
- B. POST
- C. DELETE
- D. GET

 Answer: C

---

## 11. REST APIs return

- A. Views
- B. JSP
- C. Data
- D. HTML pages

 Answer: C

---

## 12. Which annotation maps GET request?

`@GetMapping("/users")`

- A. `@PostMapping`
- B. `@PutMapping`
- C. `@GetMapping`
- D. `@RequestMapping`

 Answer: C

---

**13. Which media type represents JSON?**

- A. text/plain
- B. application/xml
- C. application/json
- D. text/html

 Answer: C

---

**14. Which client tool is used to test REST APIs?**

- A. Browser
- B. Postman
- C. Eclipse
- D. Maven

 Answer: B

---

**15. Which HTTP status code means success?**

- A. 404
- B. 500
- C. 200
- D. 403

 Answer: C

---

**16. Which HTTP status code means resource created?**

- A. 200
- B. 201
- C. 400
- D. 500

 Answer: B

---

**17. RESTful URL should represent**

- A. Action
- B. Method name
- C. Resource name
- D. Class name

 **Answer:** C

---

### **18. Which is valid REST URL?**

- A. /getUsers
- B. /fetchAll
- C. /users
- D. /doAction

 **Answer:** C

---

### **19. Which annotation converts object to JSON automatically?**

- A. @Controller
- B. @ResponseBody
- C. @RestController
- D. Both B and C

 **Answer:** D

---

### **20. REST APIs are mostly used for**

- A. Server-side UI
- B. Distributed systems
- C. Desktop apps
- D. File handling

 **Answer:** B

---

## **◆ MEDIUM LEVEL MCQs (21–40)**

---

### **21. SOAP vs REST – SOAP uses**

- A. JSON
- B. XML only
- C. Plain text
- D. Binary

 **Answer:** B

---

## 22. REST is preferred over SOAP because

- A. REST is faster & lightweight
- B. SOAP is deprecated
- C. REST uses XML only
- D. SOAP doesn't work on HTTP

 **Answer:** A

---

## 23. Which annotation maps POST request?

`@PostMapping("/users")`

- A. `@GetMapping`
- B. `@PostMapping`
- C. `@PutMapping`
- D. `@DeleteMapping`

 **Answer:** B

---

## 24. Which annotation binds JSON body to object?

`@RequestBody`

- A. `@RequestParam`
- B. `@PathVariable`
- C. `@RequestBody`
- D. `@ModelAttribute`

 **Answer:** C

---

## 25. Which annotation binds path variable?

`@GetMapping("/users/{id}")`

- A. @RequestParam
- B. @PathVariable
- C. @RequestBody
- D. @ResponseBody

 Answer: B

---

## 26. Which is correct REST controller method?

```
@GetMapping("/users")
public List<User> getUsers()
```

- A. Invalid
- B. Valid
- C. Missing annotation
- D. Missing return

 Answer: B

---

## 27. Which HTTP status code means NOT FOUND?

- A. 200
- B. 201
- C. 404
- D. 500

 Answer: C

---

## 28. Which REST principle enforces statelessness?

- A. Cacheable
- B. Client-server
- C. Stateless constraint
- D. Uniform interface

 Answer: C

---

## 29. Which layer should contain REST logic?

- A. Repository
- B. Controller

- C. Service
- D. DAO

 Answer: B

---

### 30. Which annotation sets HTTP response status?

`@ResponseStatus(HttpStatus.CREATED)`

- A. `@Status`
- B. `@ResponseCode`
- C. `@ResponseStatus`
- D. `@HttpStatus`

 Answer: C

---

### 31. Which RestTemplate method sends GET request?

`getForObject()`

- A. `postForObject`
- B. `put`
- C. `getForObject`
- D. `delete`

 Answer: C

---

### 32. Which method sends POST request using RestTemplate?

`postForObject()`

- A. `getForObject`
- B. `postForObject`
- C. `put`
- D. `exchange`

 Answer: B

---

### 33. Which method deletes resource using RestTemplate?

- A. delete()
- B. remove()
- C. clear()
- D. drop()

 Answer: A

---

#### 34. Which HTTP method is idempotent?

- A. POST
- B. PUT
- C. PATCH
- D. Both GET and PUT

 Answer: D

---

#### 35. Which breaks REST design?

- A. Stateless services
- B. Resource-based URLs
- C. Using verbs in URLs
- D. HTTP status codes

 Answer: C

---

#### 36. Which is correct JSON representation?

`{"id":1, "name": "John"}`

- A. Invalid
- B. Valid
- C. XML
- D. Array

 Answer: B

---

#### 37. Which header defines request body format?

- A. Accept
- B. Content-Type
- C. Host
- D. Authorization

 **Answer:** B

---

### **38. Which header defines response format expected by client?**

- A. Accept
- B. Content-Type
- C. Host
- D. Cookie

 **Answer:** A

---

### **39. Which annotation enables CORS (briefly)?**

`@CrossOrigin`

- A. `@EnableCors`
- B. `@AllowOrigin`
- C. `@CrossOrigin`
- D. `@Cors`

 **Answer:** C

---

### **40. Which REST operation uses PUT vs PATCH?**

- A. PUT → partial update
- B. PATCH → full update
- C. PUT → full update
- D. Both same

 **Answer:** C

---

## **HARD LEVEL MCQs (41–60)**

---

### **41. Which REST constraint ensures scalability?**

- A. Statelessness
- B. Layered system
- C. Cacheable
- D. All

 Answer: D

---

#### 42. Which is NOT REST constraint?

- A. Client-server
- B. Stateful
- C. Uniform interface
- D. Stateless

 Answer: B

---

#### 43. Identify issue

```
@PostMapping("/users")
public void create(User u)
```

- A. Missing @RequestBody
- B. Missing @PostMapping
- C. Compile error
- D. No issue

 Answer: A

---

#### 44. Which is best response for delete success?

- A. 200 OK
- B. 204 No Content
- C. 201 Created
- D. 404 Not Found

 Answer: B

---

#### 45. Which approach is REST compliant?

- A. /addUser
- B. /createUser
- C. /users
- D. /doAdd

 Answer: C

---

#### **46. Which is safest REST API design?**

- A. Session-based
- B. Stateless with token
- C. Cookie-based
- D. Server session

 **Answer:** B

---

#### **47. Which exception is commonly returned as 400?**

- A. NullPointerException
- B. Validation error
- C. RuntimeException
- D. DB crash

 **Answer:** B

---

#### **48. Which is correct RestTemplate exchange()?**

```
exchange(url, HttpMethod.GET, entity, User.class)
```

- A. Invalid
- B. Valid
- C. Only POST allowed
- D. Deprecated

 **Answer:** B

---

#### **49. Which layer should call RestTemplate?**

- A. Controller
- B. Service
- C. Repository
- D. View

 **Answer:** B

---

#### **50. Which breaks statelessness?**

- A. JWT token
- B. Session storage

- C. Authorization header
- D. HTTP headers

 **Answer:** B

---

## **51. Which improves API discoverability?**

- A. Hardcoded URLs
- B. Proper HTTP methods
- C. HATEOAS (conceptually)
- D. SOAP

 **Answer:** C

---

## **52. Which is REST error response best practice?**

- A. Stack trace
- B. Meaningful HTTP status + message
- C. HTML error page
- D. JSP view

 **Answer:** B

---

## **53. Which RestTemplate method supports all HTTP methods?**

- A. getForObject
- B. postForObject
- C. exchange
- D. put

 **Answer:** C

---

## **54. Which REST client is preferred for testing in labs?**

- A. Browser only
- B. Postman
- C. Curl only
- D. Maven

 **Answer:** B

---

## **55. Which improves backward compatibility?**

- A. Versioning in URL (/v1/users)
- B. Changing response format
- C. Removing fields
- D. Renaming URLs

 **Answer:** A

---

## **56. Which is correct for update REST?**

`@PutMapping("/users/{id}")`

- A. Invalid
- B. Valid
- C. GET required
- D. POST required

 **Answer:** B

---

## **57. Which supports JSON ↔ Object conversion?**

- A. JDBC
- B. Jackson
- C. JSTL
- D. Hibernate

 **Answer:** B

---

## **58. Which causes 415 error?**

- A. Wrong URL
- B. Unsupported Media Type
- C. Server error
- D. Unauthorized

 **Answer:** B

---

## **59. Which REST principle avoids tight coupling?**

- A. Uniform interface
- B. Statelessness

- A. Cache
- B. Layered

 **Answer:** A

---

## 60. Spring Boot REST architecture follows

- A. Monolithic
- B. MVC layered (Controller–Service–Repo)
- C. Client-side MVC
- D. Scriptlet based

 **Answer:** B

## ◆ EASY LEVEL MCQs (1–20)

---

### 1. Testing in Spring is mainly used to

- A. Improve UI
- B. Validate correctness of code
- C. Replace debugging
- D. Improve compilation speed

 **Answer:** B

---

### 2. Which framework is commonly used for unit testing in Spring?

- A. Mockito
- B. JUnit
- C. TestNG
- D. All

 **Answer:** D

---

### 3. Unit testing focuses on

- A. Whole application
- B. Individual components

- C. Database only
- D. UI only

 **Answer:** B

---

#### **4. Which annotation starts Spring Boot test context?**

`@SpringBootTest`

- A. `@SpringTest`
- B. `@SpringBootTest`
- C. `@TestContext`
- D. `@BootTest`

 **Answer:** B

---

#### **5. Which tool is used to test Spring MVC controllers?**

- A. JDBC
- B. MockMvc
- C. Hibernate
- D. Tomcat

 **Answer:** B

---

#### **6. Which annotation marks test method?**

`@Test`

- A. `@Run`
- B. `@Execute`
- C. `@Test`
- D. `@Check`

 **Answer:** C

---

#### **7. Service layer testing usually mocks**

- A. Controller
- B. Repository
- C. View
- D. Browser

 **Answer:** B

---

## **8. Which annotation mocks a bean in Spring test?**

`@MockBean`

- A. `@Mock`
- B. `@MockBean`
- C. `@Autowired`
- D. `@Spy`

 **Answer:** B

---

## **9. Integration testing tests**

- A. Single method
- B. Single class
- C. Multiple layers together
- D. Only controller

 **Answer:** C

---

## **10. REST API testing checks**

- A. UI rendering
- B. HTTP request & response
- C. JSP compilation
- D. CSS

 **Answer:** B

---

## **11. Spring Security is used for**

- A. Logging
- B. Authentication & Authorization
- C. ORM
- D. Testing

 **Answer:** B

---

## 12. Authentication means

- A. What user can do
- B. Who the user is
- C. Session creation
- D. Token generation

 Answer: B

---

## 13. Authorization means

- A. Login
- B. Identity verification
- C. Access control
- D. Token validation

 Answer: C

---

## 14. Which annotation secures endpoints?

- A. @Secure
- B. @EnableSecurity
- C. @PreAuthorize
- D. @Controller

 Answer: C

---

## 15. Default authentication mechanism in Spring Security

- A. JWT
- B. OAuth
- C. Basic Authentication
- D. SAML

 Answer: C

---

## 16. JWT stands for

- A. Java Web Token
- B. JSON Web Token
- C. Java With Token
- D. JSON With Token

 **Answer:** B

---

### **17. JWT is mainly used for**

- A. Session storage
- B. Stateless authentication
- C. UI rendering
- D. Encryption only

 **Answer:** B

---

### **18. Which HTTP header carries JWT token?**

- A. Cookie
- B. Authorization
- C. Content-Type
- D. Accept

 **Answer:** B

---

### **19. Spring Security works using**

- A. Filters
- B. Servlets
- C. JSP
- D. Controllers only

 **Answer:** A

---

### **20. Which dependency enables security in Spring Boot?**

`spring-boot-starter-security`

- A. web
- B. test
- C. security
- D. data-jpa

 **Answer:** C

---

## ◆ MEDIUM LEVEL MCQs (21–40)

---

### 21. Which annotation tests only MVC layer?

@WebMvcTest

- A. @SpringBootTest
- B. @WebMvcTest
- C. @DataJpaTest
- D. @ContextTest

 Answer: B

---

### 22. MockMvc is used to

- A. Mock DB
- B. Mock HTTP requests
- C. Mock services
- D. Mock security

 Answer: B

---

### 23. Identify correct test

mockMvc.perform(get("/users"))

- A. Invalid
- B. Valid
- C. Missing annotation
- D. Compile error

 Answer: B

---

### 24. Which annotation disables security for tests?

@WithMockUser

- A. @MockUser
- B. @WithMockUser
- C. @DisableSecurity
- D. @TestUser

 **Answer:** B

---

## **25. Service layer test should**

- A. Load full context
- B. Mock repository
- C. Call controller
- D. Start server

 **Answer:** B

---

## **26. Integration test usually uses**

- A. Mocks only
- B. Real beans
- C. UI layer
- D. JSP

 **Answer:** B

---

## **27. Which annotation loads application context?**

- A. @ContextConfiguration
- B. @SpringBootTest
- C. Both
- D. None

 **Answer:** C

---

## **28. Which HTTP status means unauthorized?**

- A. 200
- B. 201
- C. 401
- D. 403

 **Answer:** C

---

## **29. Which HTTP status means forbidden?**

- A. 401
- B. 403
- C. 404
- D. 500

 Answer: B

---

### 30. Which interface provides user details?

- A. UserRepository
- B. UserDetails
- C. Authentication
- D. Principal

 Answer: B

---

### 31. Which interface loads users from DB?

- A. UserService
- B. UserDetailsService
- C. AuthenticationManager
- D. PasswordEncoder

 Answer: B

---

### 32. Which encodes passwords?

- A. JWT
- B. Base64
- C. PasswordEncoder
- D. Authentication

 Answer: C

---

### 33. Which encoder is recommended?

- A. Plain text
- B. MD5
- C. BCryptPasswordEncoder
- D. SHA-1

 Answer: C

---

#### **34. Which breaks stateless security?**

- A. JWT
- B. Sessions
- C. Tokens
- D. Headers

 **Answer:** B

---

#### **35. Which annotation secures method level?**

`@PreAuthorize("hasRole('ADMIN')")`

- A. @Secure
- B. @Authorize
- C. @PreAuthorize
- D. @Role

 **Answer:** C

---

#### **36. Which JWT part stores user claims?**

- A. Header
- B. Signature
- C. Payload
- D. Key

 **Answer:** C

---

#### **37. Which tool tests secured REST APIs?**

- A. Browser
- B. Postman
- C. Maven
- D. Git

 **Answer:** B

---

#### **38. Which annotation enables method security?**

`@EnableGlobalMethodSecurity`

- A. @EnableSecurity
- B. @EnableMethodSecurity
- C. @EnableGlobalMethodSecurity
- D. @EnableJWT

 **Answer:** C

---

### **39. Which testing avoids starting server?**

- A. Integration test
- B. Unit test
- C. System test
- D. Performance test

 **Answer:** B

---

### **40. Which improves test isolation?**

- A. Real DB
- B. Mocks
- C. UI tests
- D. Manual testing

 **Answer:** B

---

## **HARD LEVEL MCQs (41–60)**

---

### **41. Identify issue**

```
@WebMvcTest(UserController.class)  
@Autowired  
UserService service;
```

- A. Valid
- B. Service not loaded
- C. Compile error
- D. Security issue

 **Answer:** B

---

## 42. Which is best for controller testing?

- A. Full context
- B. @WebMvcTest + MockMvc
- C. JDBC test
- D. Manual testing

 Answer: B

---

## 43. Which breaks layered testing?

- A. Mock repository in service test
- B. Real DB in unit test
- C. Mock service in controller test
- D. MockMvc usage

 Answer: B

---

## 44. Why JWT preferred over sessions?

- A. Faster DB
- B. Stateless & scalable
- C. UI friendly
- D. Easier coding

 Answer: B

---

## 45. Which JWT validation is mandatory?

- A. Username
- B. Token signature
- C. Role
- D. Expiry optional

 Answer: B

---

## 46. Which causes 403 error?

- A. Invalid credentials
- B. No authentication

- C. No authorization
- D. Server error

 **Answer:** C

---

#### **47. Which security filter handles authentication?**

- A. DispatcherServlet
- B. UsernamePasswordAuthenticationFilter
- C. Controller
- D. ViewResolver

 **Answer:** B

---

#### **48. Which approach is safest?**

- A. Basic auth everywhere
- B. JWT with HTTPS
- C. Session based
- D. Cookies only

 **Answer:** B

---

#### **49. Which is NOT JWT advantage?**

- A. Stateless
- B. Self-contained
- C. Easy revocation
- D. Scalable

 **Answer:** C

---

#### **50. Which breaks Spring Security config?**

- A. permitAll()
- B. hasRole()
- C. Disabling CSRF blindly
- D. Password encoder

 **Answer:** C

---

## **51. Which test ensures security rules?**

- A. Unit test
- B. Integration test
- C. Security test with MockMvc
- D. UI test

 **Answer:** C

---

## **52. Which avoids real DB in tests?**

- A. @SpringBootTest
- B. @MockBean
- C. @EnableSecurity
- D. @Autowired

 **Answer:** B

---

## **53. Which test runs slowest?**

- A. Unit test
- B. Integration test
- C. Mock test
- D. Service test

 **Answer:** B

---

## **54. Which improves CI/CD stability?**

- A. Manual testing
- B. Automated tests
- C. UI tests only
- D. Production testing

 **Answer:** B

---

## **55. Which causes token misuse?**

- A. HTTPS
- B. Short expiry
- C. Storing token in localStorage insecurely
- D. Signature

 Answer: C

---

## 56. Which approach is REST + Security compliant?

- A. Session cookies
- B. JWT in Authorization header
- C. Server sessions
- D. Hidden fields

 Answer: B

---

## 57. Which testing ensures API correctness end-to-end?

- A. Unit test
- B. Controller test
- C. Integration test
- D. Mock test

 Answer: C

---

## 58. Which improves maintainability?

- A. Hardcoded credentials
- B. Central security config
- C. Duplicate checks
- D. Controller-level auth

 Answer: B

---

## 59. Which violates security best practice?

- A. BCrypt encoding
- B. Role-based access
- C. Plain-text passwords
- D. JWT expiry

 Answer: C

---

## 60. Spring Testing + Security architecture follows

- A. Scriptlet
- B. Monolithic
- C. Layered + secure MVC/REST
- D. Client-side MVC

 Answer: C

## ◆ EASY LEVEL MCQs (1–20)

---

### 1. Microservices architecture is about

- A. Single large application
- B. Multiple small independent services
- C. Desktop applications
- D. Client-side applications

 Answer: B

---

### 2. Microservices are usually

- A. Tightly coupled
- B. Loosely coupled
- C. Hardcoded
- D. Monolithic

 Answer: B

---

### 3. Each microservice should

- A. Share same database
- B. Be independently deployable
- C. Be written in same language
- D. Run in same JVM

 Answer: B

---

### 4. Microservices communicate mainly using

- A. Files
- B. Shared memory
- C. Network calls (HTTP/REST)
- D. Threads

 **Answer:** C

---

## **5. Which protocol is most commonly used in microservices?**

- A. FTP
- B. SMTP
- C. HTTP/REST
- D. JDBC

 **Answer:** C

---

## **6. Microservices architecture is an alternative to**

- A. Client-server
- B. MVC
- C. Monolithic architecture
- D. Layered architecture

 **Answer:** C

---

## **7. Fragmentation of business requirement means**

- A. Breaking UI
- B. Breaking DB
- C. Breaking application into services
- D. Breaking code into methods

 **Answer:** C

---

## **8. Each microservice usually has**

- A. Shared configuration
- B. Shared codebase
- C. Its own code & lifecycle
- D. Same deployment

 **Answer:** C

---

## **9. Which Spring technology is commonly used for microservices?**

- A. Spring MVC
- B. Spring Boot
- C. Spring JDBC
- D. Spring JSP

 **Answer:** B

---

## **10. API Gateway acts as**

- A. Database
- B. Load balancer only
- C. Single entry point
- D. Service registry

 **Answer:** C

---

## **11. Service Discovery helps in**

- A. UI rendering
- B. Finding service locations dynamically
- C. Database queries
- D. Logging

 **Answer:** B

---

## **12. Which is an example of Service Discovery tool?**

- A. Maven
- B. Postman
- C. Eureka
- D. Hibernate

 **Answer:** C

---

## **13. Which deployment pattern is common in microservices?**

- A. WAR on one server
- B. Independent deployment per service

- C. One EAR file
- D. Desktop deployment

 **Answer:** B

---

#### **14. Database per microservice means**

- A. One DB for all services
- B. One table per service
- C. Each service manages its own DB
- D. One schema only

 **Answer:** C

---

#### **15. Microservices improve**

- A. Tight coupling
- B. Scalability
- C. Complexity only
- D. Compile time

 **Answer:** B

---

#### **16. Microservices are usually**

- A. Stateful
- B. Stateless
- C. UI based
- D. Session dependent

 **Answer:** B

---

#### **17. Which format is commonly used for data exchange?**

- A. XML only
- B. Binary
- C. JSON
- D. CSV

 **Answer:** C

---

## **18. Which is NOT a microservice characteristic?**

- A. Independent deployment
- B. Loose coupling
- C. Shared database
- D. Technology independence

 **Answer:** C

---

## **19. Spring Boot helps microservices by**

- A. Manual config
- B. Embedded server
- C. XML heavy config
- D. JSP scripting

 **Answer:** B

---

## **20. Microservices suit best for**

- A. Small scripts
- B. Large evolving systems
- C. One-page apps
- D. Static websites

 **Answer:** B

---

## **◆ MEDIUM LEVEL MCQs (21–40)**

### **21. Major drawback of monolithic architecture**

- A. Easy testing
- B. Easy deployment
- C. Difficult scaling
- D. Simple design

 **Answer:** C

---

### **22. Which problem does API Gateway solve?**

- A. DB joins
- B. Multiple client calls to services
- C. Object mapping
- D. Thread safety

 **Answer:** B

---

### **23. Which is a responsibility of API Gateway?**

- A. Authentication
- B. Routing
- C. Rate limiting
- D. All

 **Answer:** D

---

### **24. Which architecture promotes polyglot programming?**

- A. Monolithic
- B. Layered
- C. Microservices
- D. MVC

 **Answer:** C

---

### **25. Which is correct microservice design?**

- A. UI + DB + logic together
- B. Service with single responsibility
- C. Shared DB across services
- D. Tight coupling

 **Answer:** B

---

### **26. Which discovery pattern is used by Eureka?**

- A. Client-side discovery
- B. Server-side discovery
- C. Static discovery
- D. DNS only

 **Answer:** A

---

## 27. Which annotation enables Eureka client?

@EnableEurekaClient

- A. @EnableDiscovery
- B. @EnableEurekaClient
- C. @EnableService
- D. @EnableRegistry

 Answer: B

---

## 28. Why DB per service is recommended?

- A. Easier joins
- B. Loose coupling
- C. Shared transactions
- D. Less memory

 Answer: B

---

## 29. Which communication style is synchronous?

- A. REST
- B. Messaging
- C. Event-driven
- D. Queue based

 Answer: A

---

## 30. Which communication style is asynchronous?

- A. REST
- B. HTTP GET
- C. Messaging / Events
- D. Controller call

 Answer: C

---

## 31. Which deployment allows scaling one service only?

- A. Monolithic
- B. Microservices
- C. EAR deployment
- D. Desktop app

 **Answer:** B

---

### **32. Which tool is commonly used as API Gateway?**

- A. Zuul
- B. Eureka
- C. Hibernate
- D. MySQL

 **Answer:** A

---

### **33. Which is a valid microservice REST endpoint?**

- A. /getOrder
- B. /processOrder
- C. /orders
- D. /doOrder

 **Answer:** C

---

### **34. Which issue arises with multiple DBs?**

- A. Tight coupling
- B. Distributed transactions
- C. UI issues
- D. Compilation error

 **Answer:** B

---

### **35. Which pattern avoids direct service calls?**

- A. Layered
- B. API Gateway
- C. MVC
- D. DAO

 **Answer:** B

---

### **36. Which is true about microservices testing?**

- A. Only unit testing needed
- B. Needs contract & integration testing
- C. UI testing only
- D. No testing required

 **Answer:** B

---

### **37. Which helps service scaling?**

- A. Shared state
- B. Stateless services
- C. Hardcoded config
- D. Single instance

 **Answer:** B

---

### **38. Which breaks microservices principle?**

- A. Independent deployment
- B. Shared database
- C. API Gateway
- D. Service discovery

 **Answer:** B

---

### **39. Which approach improves fault isolation?**

- A. Monolithic
- B. Microservices
- C. Shared JVM
- D. Shared DB

 **Answer:** B

---

### **40. Which Spring feature helps configuration in microservices (conceptually)?**

- A. application.properties
- B. Centralized config server

- A. JSP
- B. JDBC

 **Answer:** B

---

## HARD LEVEL MCQs (41–60)

---

### 41. Biggest challenge in microservices

- A. UI design
- B. Distributed system complexity
- C. Java coding
- D. MVC pattern

 **Answer:** B

---

### 42. Which breaks independent deployment?

- A. Loose coupling
- B. Shared database schema
- C. REST APIs
- D. API Gateway

 **Answer:** B

---

### 43. Which problem does Service Discovery solve?

- A. Hardcoded service URLs
- B. UI routing
- C. DB access
- D. Logging

 **Answer:** A

---

### 44. Which is NOT responsibility of API Gateway?

- A. Authentication
- B. Aggregation

- C. Business logic
- D. Routing

 **Answer:** C

---

#### **45. Which is safer communication between services?**

- A. Direct DB access
- B. REST APIs
- C. Shared classes
- D. Static method calls

 **Answer:** B

---

#### **46. Which pattern handles partial failures better?**

- A. Monolithic
- B. Microservices
- C. MVC
- D. Client-server

 **Answer:** B

---

#### **47. Which leads to tight coupling in microservices?**

- A. REST contracts
- B. Shared libraries with domain logic
- C. API Gateway
- D. Service registry

 **Answer:** B

---

#### **48. Which is true about transactions in microservices?**

- A. ACID across services easily
- B. Single DB transaction
- C. Eventually consistent
- D. No consistency needed

 **Answer:** C

---

## **49. Which is best practice for microservice data access?**

- A. Cross-service DB joins
- B. DB per service
- C. Shared schema
- D. Central DB

 **Answer:** B

---

## **50. Which approach improves resilience?**

- A. Single service handling all
- B. Circuit breaker (conceptually)
- C. Shared state
- D. Synchronous chaining

 **Answer:** B

---

## **51. Which makes debugging harder?**

- A. Single service
- B. Distributed logging needed
- C. Monolithic logs
- D. Local execution

 **Answer:** B

---

## **52. Which architecture fits cloud-native apps?**

- A. Monolithic
- B. Desktop
- C. Microservices
- D. Standalone JVM

 **Answer:** C

---

## **53. Which breaks scalability?**

- A. Stateless services
- B. Independent deployment
- C. Session-based state
- D. API Gateway

 Answer: C

---

#### 54. Which is correct flow?

- A. Client → Service → DB
- B. Client → API Gateway → Service
- C. Client → DB → Service
- D. UI → DB

 Answer: B

---

#### 55. Which is required for dynamic scaling?

- A. Hardcoded ports
- B. Service discovery
- C. Static IPs
- D. JSP

 Answer: B

---

#### 56. Which is NOT microservices benefit?

- A. Independent scaling
- B. Faster development
- C. Simple debugging
- D. Technology flexibility

 Answer: C

---

#### 57. Which increases operational complexity?

- A. Monolithic apps
- B. Microservices
- C. Desktop apps
- D. Static sites

 Answer: B

---

#### 58. Which testing is critical in microservices?

- A. Unit only
- B. Contract testing
- C. UI only
- D. Manual only

 **Answer:** B

---

### **59. Which ensures loose coupling?**

- A. Shared database
- B. REST contracts
- C. Shared state
- D. Static config

 **Answer:** B

---

### **60. Spring Boot Microservices architecture follows**

- A. Scriptlet based
- B. Monolithic MVC
- C. Distributed, loosely coupled services
- D. Client-side MVC

 **Answer:** C