# Advanced Java - Important 10-Mark Questions

## UNIT I: JDBC

1. Explain the types of JDBC drivers. Compare each with examples.

2. Discuss the process of establishing a connection to a database using JDBC. Write a program to insert and retrieve data using PreparedStatement.

3. Explain the role of ResultSet in JDBC. What are its types? Illustrate with a sample program.

4. What are the different types of Statement objects in JDBC? When should each be used?

5. Write a model JDBC program to perform all CRUD (Create, Read, Update, Delete) operations on a table named student.

## UNIT II: Servlets

1. Explain the complete life cycle of a servlet with a neat diagram.

2. Describe the use of Apache Tomcat server in servlet development. How do you deploy a servlet in Tomcat?

3. Differentiate between javax.servlet and javax.servlet.http packages. What classes/interfaces do they contain?

4. Create a servlet that reads user input using getParameter() and displays it back to the user. Explain how parameter passing works in servlets.

5. Explain how HTTP requests and responses are handled in servlets. Write a servlet to process both GET and POST requests.

## UNIT III: Session Management & Listeners

1. What is HttpSession? Explain how session tracking is done using HttpSession, cookies, and URL rewriting with examples.

2. Differentiate between persistent and non-persistent cookies. How are cookies used in servlet-based web applications?

3. Explain the role of listeners in web applications. Describe the working of HttpSessionListener and

ServletContextListener.

4. What is web application security? Explain different techniques for securing web applications in Java EE.

5. Write a servlet program to demonstrate session creation and invalidation using HttpSession.

**UNIT IV: JSP and EJB**

1. Differentiate between Servlets and JSP. Explain the lifecycle of a JSP.

2. What are JSP tags? Explain different types of JSP tags with examples.

3. Explain the architecture and lifecycle of different types of Enterprise Java Beans (Session Bean, Entity Bean, Message-Driven Bean).

4. Describe the structure and purpose of deployment descriptors (web.xml, ejb-jar.xml) in Java EE applications.

5. Write a JSP program that takes user input and displays it after processing. Also, explain how JSP uses request and response objects.

**UNIT V: Hibernate**

1. Explain the steps involved in developing a Hibernate application. Provide an example with annotations or XML configuration.

2. Describe the Hibernate Persistence Object Lifecycle with a neat diagram. Explain each state with suitable examples.

3. What is SessionFactory in Hibernate? How is it created and used?

4. Discuss the various primary key generation strategies in Hibernate with examples.

5. Explain transaction management in Hibernate. How does Hibernate handle ACID properties?

6. What is connection pooling in Hibernate? Why is it important, and how is it implemented?

7. Explain bulk operations in Hibernate. How are HQL and Criteria API used for bulk updates or deletes?

8. What are Hibernate filters? How can you enable and use them effectively?

9. Discuss different types of Hibernate mappings. Explain One-to-One, One-to-Many, and

Many-to-Many with examples.

10. Write a Hibernate program to map two entities using annotations and perform CRUD operations.