

# Enterprise Programming – Question Bank

1. What is JDBC? Explain its purpose and key features in enterprise Java applications.
2. Compare and contrast the four types of JDBC drivers with use cases.
3. Explain the JDBC architecture. How does it support two-tier and three-tier applications?
4. Describe the role of important JDBC classes and interfaces such as `Connection`, `Statement`, `ResultSet`, and `PreparedStatement`.
5. How do you use Prepared Statements in JDBC, and what are their advantages over Statements?
6. Explain the Servlet lifecycle. Describe the methods `init()`, `service()`, and `destroy()` with examples.
7. How does the Servlet API enable web communication in Java? Discuss `javax.servlet` and `javax.servlet.http`.
8. Differentiate between `ServletConfig` and `ServletContext` with examples.
9. How is session tracking achieved in Servlets? Describe at least two techniques.
10. Explain how annotations like `@WebServlet` simplify servlet configuration.
11. What is JSP? Describe how it differs from Servlets in terms of architecture and usage.
12. Discuss the phases of the JSP lifecycle and explain the role of methods like `jspInit()` and `_jspService()`.
13. What are JSP elements? Explain with examples: declarations, expressions, scriptlets, and directives.
14. Compare JSP with Servlets in terms of ease of development and dynamic content generation.
15. How does JSP support forwarding requests and using implicit objects like `request` and `response`?
16. What is Hibernate and what is its architecture? Explain the roles of `Configuration`, `SessionFactory`, and `Session`.
17. Compare Hibernate with JPA. What are their differences and similarities?

18. What are generator classes in Hibernate? Describe five types with use cases.
19. Explain Dialects in Hibernate. Why are they necessary and how are they configured?
20. How are different data types mapped in Hibernate (primitive, date/time, binary)?
21. What is the Spring Framework? List and describe its core features.
22. What are the major modules of Spring? Describe at least four with examples.
23. Define Dependency Injection in Spring and describe its types (Constructor, Setter, Field).
24. What is Spring Boot? How does it simplify application development compared to traditional Spring?
25. Describe how Spring Boot handles REST APIs. Outline steps to create a basic REST controller.