Question 1:

In a typical layered architecture for JSP/Servlet applications, which layer is responsible for interacting with the database?

a) Presentation Layer

b) Business Logic Layer

c) Data Access Layer

d) Controller Layer

Answer: c) Data Access Layer

Question 2:

Which component in a Servlet/JSP MVC architecture acts as the controller?

a) JSP pages

b) JavaBeans/POJOs

c) Servlets

d) HTML pages

Answer: c) Servlets

Question 3:

What is the primary responsibility of the Business Logic Layer in a layered architecture?

a) Format data for display in the browser

b) Handle HTTP requests and responses

c) Execute application rules and processing

d) Perform CRUD operations on the database

Answer: c) Execute application rules and processing

Question 4:

In a well-designed layered architecture, which layer should contain only presentation logic without any business logic?

a) Service Layer

b) Data Access Layer

c) JSP Pages (View Layer)

d) Controller Layer

Answer: c) JSP Pages (View Layer)

Question 5:

Which design pattern is commonly used to implement the Data Access Layer in Java web applications?

a) MVC Pattern

b) Singleton Pattern

c) DAO (Data Access Object) Pattern

d) Front Controller Pattern

Answer: c) DAO (Data Access Object) Pattern

Answer: b) Separation of concerns and improved maintainability

Question 6:

Which layer typically handles input validation in a well-structured JSP/Servlet application?

a) View Layer (JSP) only

b) Controller Layer (Servlet) only

c) Both Controller and Business Logic Layers

d) Data Access Layer only

Answer: c) Both Controller and Business Logic Layers

Question 7:

What is the role of DTOs (Data Transfer Objects) in a layered architecture?

a) To execute SQL queries

b) To transfer data between layers without exposing domain models

c) To render HTML content

d) To handle HTTP sessions

Answer: b) To transfer data between layers without exposing domain models

Question 8:

In a three-tier architecture for web applications, which tier corresponds to the web server hosting Servlets and JSPs?

a) Client Tier

b) Middle Tier/Application Tier

c) Data Tier

d) Presentation Tier

Answer: b) Middle Tier/Application Tier

Question 9:

Which of the following represents a correct flow in MVC architecture for JSP/Servlet?

a) Client → JSP → Servlet → Database

b) Client → Servlet → Business Logic → JSP → Client

c) Client → Database → Servlet → JSP

d) Client → JSP → Database → Servlet

Answer: b) Client → Servlet → Business Logic → JSP → Client

Question 10:

What is the main purpose of using a Service Layer in addition to the DAO layer?

a) To replace the DAO layer entirely

b) To handle database connection pooling

c) To encapsulate business logic and coordinate multiple DAO operations

d) To generate HTML responses

Answer: c) To encapsulate business logic and coordinate multiple DAO operations

11. Which architectural principle is violated when JSP pages contain SQL queries or business logic?
a) Don't Repeat Yourself (DRY)
b) Keep It Simple, Stupid (KISS)
c) Separation of Concerns (SoC)
d) You Aren't Gonna Need It (YAGNI)

Answer: c) Separation of Concerns (SoC)

12. What is the main benefit of using a layered architecture in JSP/Servlet applications?
a) Faster page loading times
b) Separation of concerns and improved maintainability
c) Automatic security implementation
d) Reduced memory usage

Answer: b) Separation of concerns and improved maintainability