

Descriptive & Objective Question Bank

Descriptive Questions

Q1. Consider a **PRODUCTS** table with the fields product_id, product_name, category, price, and quantity. Write a JDBC program using **PreparedStatement** to accept product details from the user and insert a new product record into the database. Display an appropriate message after successful insertion.

Q2. Consider a **CUSTOMERS** table with the fields customer_id, customer_name, email, phone, and city. Write a JDBC program using **PreparedStatement** to accept a customer_id and update the customer's email, phone number, and city. Display the number of records updated.

Q3. Consider a **STUDENTS** table containing student_id, student_name, branch, semester, and marks. Write a JDBC program to retrieve student records using **ResultSet** and display the students' details along with their marks. Display the **first and last student records** using appropriate ResultSet methods.

Q4. Consider a **STUDENTS** table containing student_id, student_name, marks1, marks2, and marks3. Write a **PL/SQL procedure** that accepts student_id and returns the **total marks and average marks** using OUT parameters. Write a JDBC program using **CallableStatement** to execute the procedure and display the returned results.

Q5. Consider a **PRODUCTS** table containing product_id, product_name, category, price, and quantity. Write a JDBC program to retrieve product records using an **updatable ResultSet**. Accept a product_id and new quantity from the user and update the corresponding record using updateInt() and updateRow().

Q6. Consider a **PRODUCTS** table containing product_id, product_name, category, price, and quantity. Write a JDBC program using **CachedRowSet** to retrieve product records and demonstrate inserting a new product record using the RowSet. Synchronize the changes with the database after reconnecting.

Q7. Consider a **LIBRARY_BOOKS** table containing book_id, title, author, category, and price. Write a JDBC program using **PreparedStatement** to accept a book_id and delete the corresponding book record. Display a suitable message if the book exists or does not exist.

Q8. Consider a **STUDENTS** table containing student_id, student_name, branch, year, and marks. Write a JDBC program using **PreparedStatement** to accept a student ID and retrieve the corresponding student details. Display the retrieved information using **ResultSet**.

Q9. Consider a **BOOK_CATALOGUE** table containing book_id, title, author, category, publisher, and price. Write a JDBC program to retrieve all book records using **ResultSet** and display the details of each book. Demonstrate navigation through the ResultSet.

Q10. Consider a **PRODUCTS** table containing product_id, product_name, price, and quantity. Write a **PL/SQL procedure** that accepts product_id as an input parameter and returns the **total product value (price × quantity)** using an **OUT parameter**. Write a JDBC program using **CallableStatement** to execute the procedure and display the returned value.

Q11. Consider a **STUDENTS** table containing student_id, student_name, branch, semester, and marks. Write a JDBC program using an **updatable ResultSet** to retrieve the student records and insert a new student record using the moveToInsertRow(), updateXXX(), and insertRow() methods. Display all student records after insertion.

Q12. Consider a **STUDENTS** table containing student_id, student_name, branch, semester, and marks. Write a JDBC program using **CachedRowSet** to retrieve student records. Close the database connection, update the marks of a selected student while the RowSet is disconnected, and synchronize the changes with the database.

J2EE Technologies

Q13. Explain the **J2EE Enterprise Architecture** in detail. Describe its major tiers/components and explain the role of each component with a suitable diagram.

Q14. What are **J2EE Containers**? Explain the need for containers in J2EE and discuss the different types of containers available in J2EE.

Q15. Describe the different **tiers of J2EE architecture** and explain the role of each tier with a suitable diagram.

Q16. Explain the different **types of servers used in a J2EE application**. Discuss the roles of **Web Server, Application Server, and Database Server**.

Q17. Explain the different types of **J2EE Architecture Models**. Discuss the characteristics, advantages, limitations, and applications of each architecture model.

Q18. Explain **Model 1 Architecture (Page-Centric Model)** in detail. Describe its components, request-processing flow, advantages, and limitations with a suitable diagram.

Q19. Explain the **HTTP protocol** in detail. Describe the structure of an **HTTP request and HTTP response** with suitable examples.

Q20. Explain the **HTTP API** and its role in communication between a client and a web server. Discuss the commonly used **HTTP request and response components**.

Q21. Explain the **web request-processing mechanism** in a web application. Describe the complete sequence of steps involved from sending an HTTP request by the client to receiving the HTTP response, with a suitable diagram.

Q22. Explain the **MVC architecture model** used in web applications. Describe the responsibilities of **Model, View, and Controller**, and explain how they interact during request processing with a suitable diagram.

Objective Questions

JDBC

1. What is the purpose of `Class.forName()` in JDBC?
2. What is `DriverManager` in JDBC? State its role in establishing a connection between a Java application and a database.
3. What are the steps involved in JDBC programming?
4. Differentiate between `Statement` and `PreparedStatement`.
5. What is a scrollable `ResultSet`? Name any two methods used to navigate through a scrollable `ResultSet`.
6. What is an updatable `ResultSet`? State the purpose of `updateRow()` and `deleteRow()` methods.
7. What is the purpose of the `addBatch()` and `executeBatch()` method in JDBC?
8. What is the purpose of the `addBatch()` and `executeBatch()` method in JDBC?

J2EE Technologies

9. Name the different types of servers commonly used in a J2EE application.
10. What is the role of the Web Container during HTTP request processing?
11. What is the role of HTTP API in communication between a client and a web server?
12. What is an HTTP status code? Give examples of any two commonly used status codes.