



## PROGRAMMING IN JAVA

### Assignment 11

#### TYPE OF QUESTION: MCQ

Number of questions: 10

Total marks:  $10 \times 1 = 10$

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#### **QUESTION 1:**

What is the full form of JDBC?

- a. Java Database Connectivity
- b. Java Data Code
- c. Java Data Communication
- d. Java Development Connectivity

**Correct Answer:**

- a. Java Database Connectivity

**Detailed Solution:**

JDBC stands for Java Database Connectivity, a Java API used to connect and interact with relational databases. It provides methods to query and update data in a database.

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**QUESTION 2:**

Fill in the missing code to establish a connection to a MySQL database.

```
import java.sql.*;

public class JDBCExample {
    public static void main(String[] args) {
        try {
            // Load JDBC Driver
            Class.forName("com.mysql.cj.jdbc.Driver");

            // Establish Connection
            Connection connection = // INSERT CODE HERE;

            System.out.println("Connected to the database.");
            connection.close();
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

What should replace `// INSERT CODE HERE` ?

- a. `DriverManager.connect("mysql:localhost:mydb", "user", "password");`
- b. `DriverManager.getConnection("jdbc:mysql://localhost:3306/mydb", "user", "password");`
- c. `Connection.get("jdbc:mysql://localhost:3306/mydb", "user", "password");`
- d. `Driver.connect("jdbc:mysql://localhost:mydb", "user", "password");`

**Correct Answer:**

- b. `DriverManager.getConnection("jdbc:mysql://localhost:3306/mydb", "user", "password");`

**Detailed Solution:**

The `DriverManager.getConnection` method establishes a connection to the specified database URL with the provided username and password.

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**QUESTION 3:**

Identify the error in the following code and select the corrected statement:

```
import java.sql.*;

public class ResultSetExample {
    public static void main(String[] args) throws SQLException {
        Connection connection =
        DriverManager.getConnection("jdbc:mysql://localhost:3306/mydb",
        "user", "password");
        Statement stmt = connection.createStatement();
        ResultSet rs = stmt.execute("SELECT * FROM users"); // Error
        while (rs.next()) {
            System.out.println(rs.getString("username"));
        }
        connection.close();
    }
}
```

What is the correct statement to replace the line with error (`stmt.execute("SELECT * FROM users");`)?

- a. `ResultSet rs = stmt.executeQuery("SELECT * FROM users");`
- b. `ResultSet rs = stmt.runQuery("SELECT * FROM users");`
- c. `ResultSet rs = stmt.execute("users SELECT * FROM");`
- d. `ResultSet rs = stmt.fetch("SELECT * FROM users");`

**Correct Answer:**

- a. `ResultSet rs = stmt.executeQuery("SELECT * FROM users");`

**Detailed Solution:**

The `executeQuery` method is used to execute SQL queries that return a `ResultSet`.

**QUESTION 4:**

What will the following Java program output if the database contains a table `products` with a column `name` and three rows: Laptop, Phone, and Tablet?

```
import java.sql.*;

public class DisplayProducts {
    public static void main(String[] args) {
        try {
            Connection conn =
                DriverManager.getConnection("jdbc:mysql://localhost:3306/store", "root",
                    "pass");
            Statement stmt = conn.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT name FROM products");
            while (rs.next()) {
                System.out.println(rs.getString("name"));
            }
            conn.close();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}
```

- a. Compilation Error
- b. Runtime Error
- c. Laptop  
Phone  
Tablet
- d. No Output

**Correct Answer:**

- c. Laptop  
Phone  
Tablet

**Detailed Solution:**

The program fetches and displays all rows from the `name` column in the `products` table using a `ResultSet`.

**QUESTION 5:**

Complete the following code to insert a new user into a users table.

```
import java.sql.*;

public class InsertUser {
    public static void main(String[] args) {
        try {
            Connection conn =
DriverManager.getConnection("jdbc:mysql://localhost:3306/mydb", "root",
"password");
            String query = "INSERT INTO users (username, email) VALUES
(?, ?)";

            PreparedStatement pstmt = // INSERT CODE HERE;
pstmt.setString(1, "john_doe");
pstmt.setString(2, "john@example.com");
pstmt.executeUpdate();
conn.close();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}
```

What should replace `// INSERT CODE HERE` ?

- a. `conn.createStatement(query);`
- b. `conn.prepareStatement(query);`
- c. `conn.execute(query);`
- d. `conn.runStatement(query);`

**Correct Answer:**

- a. `conn.prepareStatement(query);`

**Detailed Solution:**

The `prepareStatement` method prepares the SQL query for execution, allowing the use of parameterized inputs.

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### **QUESTION 6:**

Which of the following SQL operations can be executed using the `executeUpdate` method in JDBC?

- I. `INSERT INTO users (id, name) VALUES (1, 'Alice');`
- II. `UPDATE users SET name='Bob' WHERE id=1;`
- III. `DELETE FROM users WHERE id=1;`
- IV. `SELECT * FROM users;`

- a. I, II, and III
- b. Only I and II
- c. Only I
- d. I, II, III and IV

**Correct Answer:**

- a. I, II, and III

**Detailed Solution:**

The `executeUpdate` method is used for SQL operations that modify data (`INSERT`, `UPDATE`, `DELETE`). It cannot be used for `SELECT` queries, which return a `ResultSet`.

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### **QUESTION 7:**

What is the purpose of the `DriverManager` class in JDBC?

- a. To manage database connections.
- b. To execute SQL queries.
- c. To fetch data from a database.
- d. To represent a database record.

**Correct Answer:**

- a. To manage database connections.

**Detailed Solution:**

The `DriverManager` class loads the JDBC drivers and establishes connections to databases.

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### **QUESTION 8:**

How do you establish a connection to a database using JDBC?

- a. By creating an instance of the Connection interface
- b. By using the DriverManager.getConnection() method
- c. By implementing the Connection interface
- d. By extending the Connection class

**Correct Answer:**

- b. By using the DriverManager.getConnection() method

**Detailed Solution:**

To establish a connection to a database using JDBC, you use the DriverManager.getConnection() method. This method takes a JDBC URL, username, and password as parameters and returns a Connection object, which represents a connection to the database. The JDBC URL specifies the database type, location, and other connection details.

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**QUESTION 9:**

Which method executes a simple query and returns a single Result Set object?

- a. `executeQuery()`
- b. `executeUpdate()`
- c. `execute()`
- d. `run()`

**Correct Answer:**

- a. `executeQuery()`

**Detailed Solution:**

The `executeQuery()` method is used to execute a simple SQL query that returns a single `ResultSet` object.

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**QUESTION 10:**

Which package in Java contains the classes and interfaces for JDBC?

- a. `java.sql`
- b. `java.io`
- c. `java.db`
- d. `java.net`

**Correct Answer:**

- a. `java.sql`

**Correct Answer:**

`java.sql` package in Java contains the classes and interfaces for JDBC.

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