1. Identify the role of Driver Manager.

ANSWER 1 : The DriverManager is a component of the JDBC API that manages the set of JDBC drivers that are available for an application to use. [It acts as an interface between users and drivers, and keeps track of the drivers that are available and handles establishing a connection between a database and the appropriate driver](https://www.javatpoint.com/DriverManager-class)

1. Create a schema Employee with relevant attributes in SQL. (a)Create a JDBC program which Includes the required package (b) Enter the code to create a connection and statement. (c)Include JDBC methods throw SQLException. (d)Load the MySQL DriverManager (e) Perform a Database Query and View Results of Employee Database.

ANSWER 2: import java.sql.\*;

public class EmployeeDatabase {

public static void main(String[] args) {

try {

// Load the MySQL driver

Class.forName("com.mysql.jdbc.Driver");

// Create a connection to the database

Connection conn = DriverManager.getConnection("jdbc:mysql://localhost/employee", "root", "");

// Create a statement object

Statement stmt = conn.createStatement();

// Execute a query and get the result set

ResultSet rs = stmt.executeQuery("SELECT \* FROM employee");

// Loop through the result set and print the data

while (rs.next()) {

System.out.println(rs.getInt(1) + " " + rs.getString(2) + " " + rs.getString(3));

}

// Close the connection and statement objects

rs.close();

stmt.close();

conn.close();

} catch (Exception e) {

System.out.println(e);

}

}

}

This program connects to a MySQL database called “employee” with username “root” and no password. It then executes a query to select all rows from the “employee” table and prints the data.

1. What type of package is used in JDBC to include Exception?

ANSWER 3: The SQLException class is used in JDBC to include Exception. [It is available in the java.sql package and extends the Exception class which means that we can use the methods available in the Exception class in the SQLException class as well**1**](https://www.softwaretestinghelp.com/jdbc-exception-handling/).

1. "PreparedStatement" is a valid statement in JDBC. Justify

ANSWER 4: Yes, “PreparedStatement” is a valid statement in JDBC. [It is a subclass of Statement that provides better security, portability across vendors, and performance**1**](https://docs.oracle.com/javase/tutorial/jdbc/basics/prepared.html). PreparedStatements are preferred over Statements in JDBC because they are faster when executing the same statement multiple times with different parameters, more secure as they prevent SQL injection, use a non-SQL binary protocol and use a lesser number of data packets, allow for precompilation and DB-side caching of the SQL statement, leading to overall faster execution and the ability to reuse the same SQL statement in batches. They avoid unnecessary compilation and execution of the statement again and again[**1**](https://docs.oracle.com/javase/tutorial/jdbc/basics/prepared.html).