

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

B.Tech-5<sup>th</sup> Semester (CSE/IT)

COURSE CODE (CREDITS): 18B11CI511 (3)

MAX. MARKS: 25

COURSE NAME: Advance Java

COURSE INSTRUCTORS: Dr. Pankaj Dhiman

MAX. TIME: 1 Hour 30 Min

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**Note: (a)** All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

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Q1. Explain the key concepts of GUI programming in Java. How does designing graphical user interfaces enhance the user experience in software applications? [CO-1] [4 Marks]

Q2. Explain the use of adapter classes as helper classes in event handling. How do adapter classes simplify the implementation of event listeners? [CO-2] [4 Marks]

Q3. Write a Java program that utilizes adapter classes as helper classes in event handling. Implement a simple GUI with multiple buttons, and use adapter classes to handle events for specific buttons, such as one for clicking and another for right-clicking. [CO-2] [6 Marks]

Q4. Write a Java program that demonstrates the use of the java.util package and the Collections Framework. Create a collection of objects, such as a list of students with their names and grades. Perform operations like sorting, searching, and iterating over the collection. [CO-2] [5 Marks]

Q5. Consider a simple Java application that interacts with a relational database using JDBC. Assume you have a MySQL database named "EmployeeDB" with a table named "Employees" having columns "EmployeeID," "FirstName," and "LastName." [CO-3] [6 -Marks]

a) Implement a Java program that connects to the MySQL database using JDBC.

b) Retrieve and display all records from the "Employees" table.

c) Allow the user to add a new employee to the database. Take input for "FirstName" and "LastName" from the user and insert the new record into the "Employees" table.