Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

End Term (Odd) Semester Examination November 2025

Roll no.....

Name of the Course and semester: Diploma CSE V
Name of the Paper: Java Programming
Paper Code: DTCS-505

Time: 3 hour Maximum Marks: 100

Note:

(i) All the questions are compulsory.
(ii) Answer any two sub questions from a, b and c in each main question.
(iii) Total marks for each question is 20 (twenty).
(iv) Each sub-question carries 10 marks.

Q1. (2X10=20 Marks)

a. Explain the fundamental principles of Object-Oriented Programming. How are these principles implemented in Java? CO1

b. Discuss different types of operators in Java with suitable examples. CO1

c. Write a Java program to read three numbers and determine the largest using if-else statements. Explain the logic. CO1

Q2. (2X10=20 Marks)

a. Define a class Student with data members name, rollNo, and marks. Write methods to accept and display student details. Illustrate object creation and method calling. CO2

b. What is inheritance in Java? Explain the types of inheritance supported in Java with examples. CO2

c. Explain the concept of arrays and strings in Java. Write a Java program to find the largest element in a one-dimensional array. CO2

Q3. (2X10=20 Marks)

a. Define an interface Shape with methods area() and perimeter(). Implement this interface in Circle and Rectangle classes. CO3

b. Explain the steps involved in creating, compiling, and accessing user-defined packages in Java with an example. CO3

c. Discuss the importance of naming conventions and package management in Java. How do packages improve code modularity? CO3

Q4. (2X10=20 Marks)

a. What is multithreading? Explain the life cycle of a thread with a neat diagram and example. CO4

b. Write a Java program to create two threads — one to print even numbers and another to print odd numbers. Use thread synchronization if necessary. CO4

c. Explain different types of exceptions in Java. Write a program that demonstrates the use of try, catch, and finally blocks. CO4

Q5. (2X10=20 Marks)

a. Explain the components of the Abstract Window Toolkit (AWT) and their role in GUI development. CO5

b. Write a Java program using AWT to create a simple login form with labels, text fields, and buttons. CO5

c. Discuss event handling in Java. Explain the concept of event sources and listeners with an example. CO5