

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.CSc.(DS) - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - II

22UDSCT2002 - Java and Data Structures

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions (6 × 5 = 30 Marks)

1. Explain the difference between arithmetic and bit wise operators with examples.
2. Write a program to demonstrate the use of if-else & switch case with suitable examples.
3. Compare and analyze constructor overloading and method overloading with examples.
4. Write a Java program to create a class with data members and member functions with suitable example.
5. Explain the significance of interfaces in Java with an example.
6. Analyze how the try-catch-finally block improves program reliability with example.
7. How does the stack ADT ensure Last-In-First-Out (LIFO) order?
8. Assess the impact of binary tree structures on search and sorting operations.

Section C

Answer any **THREE** questions (3 × 10 = 30 Marks)

9. Develop a program to accept an array of numbers from the user and find the sum and average elements in the array.
10. The String class in Java is immutable. Analyze the advantages and disadvantages of immutability in Java with examples.
11. Justify the use of multithreading in performance-intensive applications. Provide a comparative study of single-threaded vs. multi-threaded applications.
12. Compare and analyze the differences between linear queues and circular queues in terms of space utilization and performance.
13. Compare and evaluate the efficiency of Depth-First Search (DFS) and Breadth-First Search (BFS).
