

Roll.No.

22UDSCT2002

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.Cs with DS - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - II

**22UDSCT2002 - Java and Data Structures**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Explain the basic principles of Object-Oriented Programming (OOP).
2. Explain the concept of an interface in Java.
3. Compute the result of a postfix expression using stack operations.
4. Describe the terminologies of graphs — vertex, edge, degree, path, cycle.
5. Describe the relationship between classes and objects with an example.
6. Illustrate the hierarchy of Java exception classes.
7. Classify data structures as linear and non-linear ADTs with examples.
8. Distinguish between general trees and binary trees with suitable diagrams.

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Explain the difference between if, else if, and switch statements.
10. Illustrate the working of a parameterized constructor.
11. Give an example of multiple inheritance through interfaces.
12. Compute the final value of the postfix expression:  $623 + - 382 / + *2^3 +$
13. Distinguish between searching in a binary tree and in a binary search tree.

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