

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 APRIL - 2024

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 types of relational operators in Java programming with suitable examples.
2. Compute a Java program to determine if a user-input number is positive, negative, or zero using if-else statement.
3. Examine the different string methods utilized for manipulating the strings in Java with a suitable examples.
4. Interpret the significance of constructors in Java with an example.
5. Outline the different types of exception handling methods for managing errors in Java.
6. Analyze the use of the wait(), notify() and sleep() methods in thread communication in Java with an example.
7. Show the various operations that can be performed using Queue.
8. Consider the following eight numbers 50, 33, 44, 22, 77, 35, 60 and 40. Display the construction of the binary tree by inserting the above numbers in the given order.

Section C

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

9. Discuss about the concepts of object oriented programming.
10. Develop a program with a package concept for handling geometry calculations. Include packages for circles, rectangles and triangles, each with classes to perform area calculations.
11. Infer the various stages involved in the Applet life cycle in Java with an example.
12. Trace the algorithm to convert the infix expression " $3-(4/2) + (1*5) + 6$ " to a postfix expression using stack.
13. Explain BFS & DFS graph traversals.
