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. END SEMESTER EXAMINATION APRIL/NOV - 2021
SEMESTER - III
16UCSCT3A03 **&** UCS/CT/3A03 -**Data Structures and Algorithms**

Total Duration : 3 Hrs		**Total Marks : 75**	
MCQ	: 30 Mins	MCQ	: 15
Descriptive	: 2 Hrs.30 Mins	Descriptive	: 60

Section B

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

1. Define Data structures. Write about the primitive and composite data types.

2. Write an algorithm for infix to postfix conversion. Perform the same for the expression $(A + B) * (C + D)$

3. What is recursion? Give an example.

4. How polynomials are represented? Write an algorithm for polynomial addition.

5. Discuss the types of graphs.

6. Write an algorithm to find the maximum and minimum from an array.

7. Explain the operations of tree traversal with an example.

8. Write the algorithm for Binary search with an example.

Section C

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

9. Explain how the performance of an algorithm is measured.

10. Define Queue. Explain the operations of a queue with an example.

11. Write the different insertion operations of a singly linked list with an example.

12. Write the algorithm for selection sort and solve 80,10,20,11,8,30,15.

13. Explain the working of hash table with an example.

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