

Reg. No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

B.M.S COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004
SEMESTER END EXAMINATION – JANUARY/FEBRUARY 2023

B.C.A. - I Semester

DATA STRUCTURE
(NEP Scheme 2021-22 onwards F+R)

Course Code: BCA1DSC03

Duration: 2 ½ Hours

QP Code: 1032

Max. Marks: 60

Instructions: Answer all the sections

PART – A

Answer any TEN questions. Each question carries TWO marks:

(10x2=20)

1. Define Data Structures.
2. What is sparse matrix?
3. Define the space and time complexity of an algorithm
4. What is Doubly Linked List?
5. Mention any two stack applications?
6. What is infix notation?
7. Mention any two dynamic memory allocation function.
8. What is priority queue?
9. Define the terms
 - a. Binary Tree
 - b. AVL Tree
10. Mention graph traversal methods?
11. Define shell Sort.
12. What is Binary search?

PART – B

Answer any SIX questions. Each question carries FIVE marks

(6x5=30)

13. Explain operations of linear data structure.
14. Write a C Program to find the factorial of a number using the recursion function.
15. Write a note on asymptotic notations.
16. Explain linear linked list and circular linked lists.
17. Explain the tower of Hanoi problem. Trace for three disks.
18. Write an algorithm for the linear search technique.
19. Explain selection sort technique with an example.

20. Describe Hash function.

PART – C

Answer any ONE question. Each question carries TEN marks

(1x10=10)

21. Describe the classification of data structure in detail.
22. Define BST. Perform all three traversals for the given elements
3, 6, 2, 4, 10, 1, 7.
23. Write an algorithm for Breadth First Search.

BMSCW LIBRARY