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B.M.S COLLEGE FOR WOMEN
BENGALURU – 560004

I SEMESTER END EXAMINATION – JAN/FEB-2024

B.Voc I.T: DATA STRUCTURES
(NEP Scheme 2021-22 onwards F+R)

Course Code: BVIT1DSC03

Duration: 2 ½ Hours

QP Code: 1035

Max. Marks: 60

Instructions: Answer all the sections

PART-A

Answer any TEN questions. Each question carries TWO marks.

(10x2=20)

1. Define data structure.
2. What is an Array? Mention the types of arrays.
3. Define space and time complexity of an algorithm.
4. What is Linked List?
5. What is Garbage collection?
6. Write a syntax for malloc function.
7. Expand LIFO and FIFO.
8. Mention any two applications of stack.
9. Define a Binary tree.
10. Write the two traversal strategies used in traversing a graph?
11. Define Searching and mention any one searching technique.
12. Define Hashing.

PART – B

Answer any FIVE questions. Each question carries FOUR marks.

(5x4=20)

13. Explain Abstract Data Types in detail.
14. Explain sparse matrix with an example.
15. Briefly explain the conversion of infix to postfix.
16. Write an algorithm for push and pop operations on stack.

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17. Explain the process of building a binary search tree with example.
18. Write a program to search an item using linear search technique.
19. Describe the concept of selection sort technique with an example.

PART – C

Answer any TWO questions. Each question carries TEN marks. (2x10=20)

20. Write a c program to perform insertion and deletion using circular queue.
21. Explain different types of linked lists in detail.
22. Write DFS algorithm and explain.
23. Explain different tree traversal methods with suitable examples.
