

B.C.A.
I Semester End Examination March/April-2022
Data Structure

Course Code: BCA1DSC03
Time: 2 Hrs.
Note: Answer all sections

QP Code: 1032
Max marks: 60

Part A

Answer any **TEN** questions. Each question carries **2** marks.

10x2=20

1. Define Data Structures.
2. What is abstract data type?
3. Define space and time complexities of an algorithm.
4. What is dynamic memory allocation?
5. List advantages of linked list?
6. Define stack.
7. What is circular queue?
8. What is AVL tree?
9. Define B-Tree.
10. What is Depth First Search?
11. Describe binary search technique.
12. What is shell sort?

Part B

Answer any **SIX** questions. Each question carries **5** marks.

6x5=30

13. Explain various operations perform on primitive data structures.
14. Illustrate Asymptotic notation with examples
15. Write a C program to perform multiplication two matrices.
16. Explain various types of linked list.
17. Evaluate the following postfix expression.
8, 7, 4, *, +, 3, -, 2, *
18. Write an algorithm to insert an element into circular queue.
19. Explain Breadth First Search.
20. Explain merge sort algorithm with examples.

Part C

Answer any **ONE** question. Each question carries **10** marks.

10x1=10

21. Write a c program to insert, delete and display the elements of a linear queue.
22. Explain the various tree traversal methods with an example.
23. Explain in detail quick sort technique with an example.

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