NOVEMBER 2022 **51332/SZ23A**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. Define: "Data structure".
2. Write down any two application of a stack.
3. Define the term "Array".
4. List out any two applications of linked list.
5. What is a B-Tree?
6. Write down the complexity of binary search.
7. Draw a complete graph with four vertices.
8. Define: "Bi-Connectivity".
9. What is the complexity of insertion sort?
10. Define the term "Heap".
11. Write a note on linear search.
12. What do you mean by Rehashing?

II BCA → Data Structures

PART B — (5 × 5 = 25 marks)

Answer Any FIVE questions

13. Explain the implementation of doubly linked list.

14. Write an algorithm to insert an element into a circular queue.

15. Evaluate the uses of threaded binary tree.

16. Write a procedure to find the depth first traversal of a graph.

17. Sort the following list using Shell sort technique, displaying each step. 20,12,25, 6,10,15,13.

18. Describe the different types of graph.

19. Summarize the concept of Binary search with suitable example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

20. Elaborate the procedure to inserting a node at the front of a single linked list.

21. Compare the Circular Queue and priority Queue.

22. Discuss about the binary tree ADT representation of trees.

23. What are the ways to represent a Graph? Explain.

24. Write an algorithm for Bubble sort and explain it.

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