APRIL 2025 **53504/220C3A/ 226C3A/227C3A**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions

1. State the applications of arrays.
2. What is linear list?
3. Write a note on sparse matrix.
4. Define: "Stack".
5. List out the applications of queues.
6. What is heaps?
7. Write down the operations of circular queue.
8. What is B Trees?
9. Show the use of AVL trees.
10. Comment on complete graph.
11. What are minimal spanning trees?
12. Define the term "Kruskal's Algorithm".

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions

13. Describe the representation of arrays.

14. Explain the searching operations on linear list.

15. Summarize the postfix expression evaluation with example.

16. Write an algorithm for circular linked list.

17. Elaborate the representation of binary tree.

18. Point out the different types of graphs.

19. Infer an algorithm for depth first traversal with example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

20. Illustrate the implementation of singly linked list with example.

21. Discuss the insertion and deletion of double linked list.

22. Outline the procedure for postorder of Binary tree traversals.

23. Develop an algorithm for binary trees with example.

24. Determine the procedure for single source shortest path.

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