PART – A (10 x 2.5 = 25 Marks)

1. Define space complexity and time complexity.
2. What are advantages of linked lists over arrays?
3. Specify applications of stacks.
5. Define AVL trees.
6. What is an ADT? Give an example.
7. What is a class template? Give an example.
8. How is prim’s algorithm different from Kruskal’s algorithm?
9. What are the advantages of doubly linked lists over single linked lists?
10. Define a play tree.

PART – B (50 Marks)

11. Explain addition of two polynomials with an example. 10
12. Write a C++ class template to implement linked stack. 10
13. Write an algorithm for conversion of infix to postfix expression. Also trace the algorithm for any infix expression. 10
14. Write an algorithm for insertion into and deletion from an AVL tree. 10
15. Explain array and linked representations of a queue. 10
16. Explain insertion and deletion of elements in a B-tree, with examples. 10
17. a) Discuss graph search methods. 7
   b) What are the applications of graphs? 3

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