

**9219/A26**

**OCTOBER 2009**

**COMPUTER ALGORITHMS AND  
DATA STRUCTURES**

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Time : Three hours

Maximum : 100 marks

**PART A — (6 × 5 = 30 marks)**

Answer any SIX questions.

1. Write the general algorithm for divide and conquer.
2. What do you understand by time and space complexities?
3. Discuss briefly job sequencing with deadlines.
4. Apply the Greedy method to solve the Knapsack problem.
5. Explain the multistage graph problem.
6. What is 0/1 Knapsack problem? Explain.
7. What are queues? Write algorithm to insert and delete elements in a queue.

8. Write an algorithm to add two polynomials using linked representation.

9. Explain the binary tree traversals with examples.

10. Differentiate between trees and binary trees.

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PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Write the algorithm to find minimum and maximum elements of the given set of numbers. Discuss its performance.

12. Explain the algorithm of selection sort with examples and analysis its time complexity.

13. Write an algorithm for single source shortest path problem using Greedy technique.

14. What is the travelling sales person problem? Explain.

15. Discuss the mazing problem with the algorithm to find a path in the maze.

16. Discuss the hashing functions.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. Discuss the use of Greedy method in optimal storage on Tapes. Compute its efficiency in comparison with sequential storage.

18. What is divide and conquer method? Explain binary search algorithm using above method and find its complexities.

19. Discuss the evaluation of expression along with the algorithm for infix to postfix conversion.

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