2216/A26 **OCTOBER 2011**

COMPUTER ALGORITHMS AND DATA STRUCTURES

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Write short notes on partition in Quick Sort.
2. Define Worst case complexity and average case complexity.
3. What is minimum spanning tree? Give example.
4. Define feasible solution and optimal solution.
5. Explain Dynamic Programming in detail.
6. Explain optimal merge pattern in detail.
7. Compare and contract stack with queue.
8. What is Garbage Collection and Compaction?
9. What is binary tree? How do you represent?
10. Explain threaded binary tree in detail.

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. Write an algorithm for selection sort.
12. Write Kruskel's algorithm to find minimal spanning tree.
13. Explain travelling sales person problem in detail.
14. Explain Flow shop scheduling in detail.
15. Explain a Mazzing problem in detail.
16. Discuss various binary tree traversal algorithms.

PART C — (2 × 15 = 30 marks)

Answer any TWO questions.

17. What is double linked list structure? Explain how insertion and deletion operations can be done on it.
18. With suitable example, explain knapsack problem in detail.
19. With examples, explain the algorithm of strassen's matrix multiplication.