

OCTOBER 2012

**P/ID 17461/  
RCL/PCAL**

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Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Discuss on space complexity.

Or

- (b) Explain selection sort with example.

2. (a) Write down tree vertex splitting algorithm.

Or

- (b) What is the optimal solution to the job sequencing with dead line problem with  $n = 4, (p_1, p_2, p_3, p_4) = (100, 10, 15, 27)$  and  $(d_1, d_2, d_3, d_4) = (2, 1, 2, 1)$ .

3. (a) Explain breadth first search procedure.

Or

- (b) Describe sum of subset problem.

4. (a) Write short notes on Least Cost (LC) search.

Or

- (b) Write down the algorithm for Newtonian interpolation.

5. (a) Draw the comparison trees for sorting 3 elements.

Or

- (b) Write non-deterministic polynomial time algorithm for the Knapsack decision problem.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

6. Explain the procedure for quick sort.
7. Describe divide and conquer method.
8. Explain Kruskal's algorithm with example.
9. Discuss on Greedy Knapsack problem.
10. Describe the multistage graph problem. Also develop an algorithm for the same using backward approach.

11. Explain graph coloring. Write down the algorithm for finding all M-coloring of a graph.
  12. Discuss on branch and bound technique with an example.
  13. Explain oracles and adversary arguments.
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