DECEMBER 2015 **P/ID 17516/PCASS**

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. Define algorithm. Write down the various criteria an algorithm must satisfy.

2. Write notes on primality testing.

3. Write notes on selection sort.

4. 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 $(d_1, d_2 d_3, d_4) = (2, 1, 2, 1)$.

5. Describe All pairs shortest path problem.

6. Write about the concept of sum of sub sets problem.

7. Write about the control abstraction for LC search.

8. Write down the non deterministic polynomial time algorithm for the knapsack decision problem.

PART B — (7 × 10 = 70 marks)

Answer any SEVEN questions.

9. Give a detailed note on randomized algorithms.

10. Explain divide and conquer method.

11. Write brief notes on tree vertex splitting.

12. Explain optimal storage on tapes.

13. Explain the multi stage graph problem. Develop an algorithm for the multi stage graph problem using backward approach.

14. Explain 0/1 knapsack problem.

15. Describe 8-queens problem.

16. Define graph coloring. Write down an algorithm for finding all m-coloring of a graph.

17. Illustrate comparison trees.

18. Describe NP-Hard graph problems.

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