DECEMBER 2014 **P/ID 17516/PCASS**

Time : Three hours Maximum : 100 marks

PART A — (6 × 5 = 30 marks)

Answer any SIX questions.

1. What is an algorithm? Write down the various criteria an algorithm must satisfy.

2. Show that the computing time for merge sort is $T(n) = O(n \log n)$

3. Explain selection sort with example.

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. Write short notes on string editing.

6. Write an algorithm for general iterative back tracking method.

7. Write the control abstraction for LC search.

8. Write the algorithm for non-deterministic sorting.

PART B — (7 × 10 = 70 marks)

Answer any SEVEN questions.

9. Explain Randomized algorithms.

10. Give a detailed note on divide and conquer method.

11. Explain quick sort with example.

12. Discuss on tree vertex splitting.

13. Explain Bellman and ford algorithm to compute shortest paths.

14. Explain O/1 Knapsack problem with example.

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

16. Describe the 8-queens problem.

17. Write notes on comparision trees.

18. Discuss on lower bounds through reductions.

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