

B.C.A. (V Semester) Examination, March 2011
ALGORITHM AND ANALYSIS

Time : 3 Hours

Max. Marks : 80

Instructions : 1) Answer *all* questions in Part – A, 6 out of 8 questions in Part – B and 3 out of 5 questions in Part – C.

2) Part – A : Questions from 1 to 8 carry 1 mark and 9 to 14 carry 2 marks *each*.

3) Part – B : *Each* question carries 5 marks.

4) Part – C : *Each* question carries 10 marks.

PART – A

1. Define Algorithm.
2. Name the asymptotic notations.
3. What is recurrence relation ?
4. Define Brute Force method.
5. Give the time complexity of selection sort.
6. Define travelling salesman problem.
7. What is Graph traversal algorithm ?
8. Define numerical problem.
9. What is the best-case efficiency of sequential search algorithm ?
10. Define θ notation.
11. What is Backtracking ?
12. Write the applications of greedy technique.
13. What is depth-first search ?
14. Define divide and conquer method.

P.T.O.

PART – B

1. Explain the steps in designing and analyzing the algorithm.
2. Explain Queen's problem.
3. Explain decision tree for three-element selection sort.
4. Analyze Strassen's matrix multiplication.
5. Explain breadth-first search algorithm.
6. Explain insertion sort problem.
7. Analyze optimal binary search tree.
8. Explain greedy technique.

PART – C

1. Explain Worst-case, Best-case and Average-case efficiency.
 2. Explain Huffman's algorithm.
 3. Explain Kruskal's algorithm.
 4. Explain closest-pair and convex-hull problem.
 5. Give the optimal analysis for knapsack problem.
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