



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

SECOND SEMESTER – APRIL 2017

16PCS2MC01- DESIGN AND ANALYSIS OF ALGORITHMS

Date: 19-04-2017
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

Section – A

Answer all Questions. (10 X 2 = 20 Marks)

1. What do you mean by Graph coloring problem?
2. What is an algorithm efficiency?
3. Write the conditions involved in the Divide and Conquer Technique.
4. Write the advantages of using Binary search.
5. Define Adjacency Matrix. Give example.
6. Define Binary search tree.
7. Write the differences between Back tracking and Branch and Bound technique.
8. Define state space tree.
9. What is NP complete problem?
10. Define Bin packing.

Section – B

Answer all Questions.

(5 X 8 = 40 Marks)

11 a). Differentiate between Euler's Consecutive Integer Checking Method to find GCD.

Or

b). Write about the general plan to follow in analyzing recursive algorithm
Give an example.

12 a). Explain the procedure involved in Kruskal's algorithm.

Or

b). Explain Strassen's Matrix multiplication with an example.

13 a). Design an algorithm to solve the Knapsack problem using dynamic programming.

Or

b). Write a procedure to construct the optimal binary search.

14 a). Explain with example the Sub set sum problem solving technique.

Or

b). Explain in detail about Assignment problem using Branch and Bound technique.

15 a). Write about class p, class NP problems.

Or

b). Write the approximation algorithm to solve the Knapsack problem.

Section – C

Answer any TWO Questions(2 X 20 = 40 Marks)

16 a). Explain in detail the fundamentals of algorithm efficiency calculation.

b). Explain the following sorting algorithm

i) Quick sort

ii) Merge Sort

17 a). Explain the Warshall's algorithm with an example.

b). Explain the Branch and Bound technique. Use this technique solve the Knapsack problem.

18 a). Solve the Traveling salesman problem using approximation algorithm.

b). Explain with an example the method involved in Dijkstra algorithm.

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