



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE**

SECOND SEMESTER – NOVEMBER 2016

**CS 2824 - DESIGN & ANALYSIS OF ALGORITHMS**

Date: 07-11-2016  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**Section – A**

**Answer all Questions**

**(10 X 2 == 20 Marks)**

1. Define an algorithm design technique.
2. Why combinatorial problems are very difficult to solve ?
3. Draw the flowchart for the execution of Divide and Conquer Technique.
4. List out the conditions satisfied by a choice in greedy Technique
5. Define dynamic programming
6. Define binary search tree
7. What do you mean by backtracking?
8. List out the advantages of branch and bound technique?
9. What is intractable problems?
10. Define Heuristics

**Section – B**

**Answer all Questions**

**(5 X 8 == 40 Marks)**

11 a). Draw the flowchart and describe about Algorithm design and analysis process.

Or

b). Explain the procedure to identify GCD using Euclid method with an example.

12 a). explain the method involved in binary search to search an element in the given list?

Or

b). How matrix multiplication is performed using strassen's multiplication technique? Give example.

13 a). Design an algorithm for computing binomial coefficient and explain it.

Or

b). Explain with an example the Warshall's algorithm.

14 a). Explain how to solve N-Queen problem using backtracking.

Or

b). Explain in detail about Hamiltonian circuit problem.

15 a). Discuss about NP complete 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). What are non recursive algorithms? Explain in detail about the mathematical analysis of non recursive Algorithms with an example.

b). Explain in detail about Prim's algorithm with an example.

17 a). What is the use of Kruskal's algorithm. Explain with an example.

b). Explain in detail the Warshall's algorithm.

18 a). Solve the knapsack problem using branch and bound technique.

b). Solve the traveling salesman problem using approximation algorithm.

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