



Analysis Of Algorithms

December 18

Computer Engineering (Semester 4)

Total marks: 80

Total time: 3 Hours

INSTRUCTIONS

- (1) Question 1 is compulsory.
- (2) Attempt any **three** from the remaining questions.
- (3) Draw neat diagrams wherever necessary.

Q1) Answer Following Question (Any Four)

- (a) What is the backtracking Approach. Explain how it is used in graph coloring. (5 marks)
- (b) Explain Randomized algorithm with example. (5 marks)
- (c) What is knuth Morris Pratt Matching? Give Examples. (5 marks)
- (d) Explain in brief the concept of Multistage Graphs? (5 marks)
- (e) Merge sort and its complexity. (5 marks)

Q2)

- a) Derive and comment on the complexity of quick sort algorithm. (10 marks)
- b) Solve following knapsack using dynamic approach. (10 marks)

Q3)

- a) What is sum of subset problem? Write the Algorithm and solve following.
array A = [2,3,5,6,7,8,9] and K=15 (10 marks)
- b) Write the algorithm for finding strassen's matrix multiplication and show the complexity is being affected? (10 marks)



Q4)

a) What is Longest common subsequence Problem? Find LCS for following
string x = ACBAED

string y = ABCABE (10 marks)

b) Explain Binary Search Tree? How to generate an optimal binary search tree. (10 marks)