

K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH
MCA SEM- III Examination Nov 2017

Design and Analysis of Algorithms

15/11/2017

Maximum Marks: 50

Note: Q1 is Compulsory.

Duration: 3 hrs

Solve any 4 from Questions 2 to 7.

	Marks
Q1. a. Describe different asymptotic notations used to calculate time complexity of algorithms.	5
b. Analyze the algorithm to print the prime numbers between 1 to N.	5
Q2. a. Describe the methods of solving recurrent relations.	5
b. Explain prune and search algorithm design technique with an example.	5
Q3. a. Is quick sort a stable sorting technique? Ascertain your response with example.	5
b. Explain radix sort with pseudo code and example. Calculate the time complexity.	5
Q4. a. Explain Knuth-Morris-Pratt string searching algorithm.	5
b. Describe about any real time application of string matching. Discuss of the efficiency of any two string matching algorithms for this application.	5
Q5. a. Perform the time complexity analysis of DFS and BFS graph algorithms.	5
b. Write notes on flow networks.	5
Q6. a. Write sweep line algorithm. Explain with an example.	5
b. Write about the applications of Delaunay triangulations.	5
Q7. Write notes on	
a. Amortized analysis of algorithms	10
b. Red black trees	
c. Convex hull problem	

All the Best!!!