Roll No .....

MCTA-102

M.E/M.Tech., I Semester

Examination, December 2015

Programming System

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions out of eight.
ii) All questions carry equal marks.

1. a) What do you mean by hashing and hash functions? 7
   b) Explain the various collision techniques used for hashing with example. 7

2. a) Explain stack queue and Huffman codes with examples. 7
   b) What is heap and how it is different from binary tree? 7

3. a) Explain recursion tree method with suitable example. 7
   b) What do you mean by backtracking techniques explain with example. 7

4. a) Explain in detail Algebraic algorithm and Set algorithm. 7
   b) Write short notes on : 7
      i) Hard problems
      ii) Combinatorial Algorithms

5. a) Explain branch and bound algorithm technique in detail. 7
   b) Write an algorithm for optimal solution of the knapsack problem using dynamic programming technique. 7

6. Write short notes on (Any Four) : 14
   a) Radix Sort
   b) Internal sorting
   c) Priority Queues
   d) Divide and Conquer Algorithm
   e) Traversal Algorithms

7. a) Explain the classes of NP Hard and NP Complete. 7
   b) Explain P versus NP problem. 7

8. a) Explain Deterministic and non-deterministic polynomial time algorithm with example. 7
   b) Explain the factors which are required to compute the performance measure of any algorithm. 7

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