



MS 12

**I Semester M.Sc. (I.T.) Examination, Dec. 2009/Jan. 2010
ALGORITHM ANALYSIS AND DESIGN
(Freshers)**

Time : 3 Hours

Max. Marks : 75

PART – A

I. Answer **all the questions : (10×2+5×1=25)**

- 1) Name the characteristics of algorithm.
- 2) List the points for designing an algorithm and implementing it as good program.
- 3) Compare static memory allocation with dynamic memory allocation.
- 4) What is a set ? List the set operations performed.
- 5) Write the efficiency of algorithm.
- 6) What do you mean by dynamic programming ?
- 7) Define minimum-cost spanning tree.
- 8) Write the important uses of external sorting.
- 9) What is finite automata ?
- 10) What is the difference between divide and conquer method and dynamic programming ?
- 11) Briefly explain the following :
 - a) Ambiguity in grammar
 - b) Alphabet
 - c) Null string
 - d) DFA
 - e) Abstract Data Type.

P.T.O.



PART – B

II. Answer **any five** questions :

(5×10=50)

- 1) How do you calculate the running time of a program ? Explain.
 - 2) Explain pointer implementation of list.
 - 3) Explain Divide and Conquer method of designing algorithms.
 - 4) Explain Prim's algorithm.
 - 5) What do you mean by backtracking ? Explain with example.
 - 6) Write the characteristics of external sorting. Why do we need it ? Explain with example.
 - 7) Explain NDFA.
 - 8) Explain matrix-chain multiplication using dynamic programming.
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