

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.

Q.1 Attempt any four of the following: 20

- A Briefly describe Big-O and Omega Ω in algorithm analysis.
- B Write a note on Master Theorem. Give an example.
- C Explain Guidelines for Asymptotic Analysis.
- D Define algorithm. State its essential characteristics.
- E Write a note on Performance characteristics of algorithms.
- F Explain the running time of an algorithm.

Q.2 Attempt any four of the following: 20

- A Write a short note on Preorder Tree Traversal?
- B Define Binary tree? How will you Check if two binary trees are identical or not??
- C Write a short note on Weighted Graphs & Directed graphs?
- D Explain Dijkstra's Algorithm?
- E What is Graph Colouring?
- F Explain Shortest Path First Algorithms?

Q.3 Attempt any four of the following: 20

- A Define merge sort. What are the advantages of merge sort?
- B Describe Longest common subsequence.
- C Write a short note on Divide and Conquer Strategy.
- D Explain in brief Huffman coding.
- E Write an algorithm to sort 'n' numbers using quicksort.
- F Sort the sequence 3, 1, 4, 1, 5, 9, 2, 6, 5 using insertion sort.

Q.4 Attempt any three of the following:

15

- A Explain Greedy Strategy with an example.
- B How will you check if a binary tree is symmetric or not?
- C Explain minimal spanning tree with examples?
- D Explain linear search algorithm with an example
- E What is Graph? Enlist Applications of Graphs?
- F Write a short note on Dynamic Programming Strategy.
