Duration: 2¹ᐟ² Hrs

Note: - 1) All questions are Compulsory.
      2) Figures to the right indicate maximum marks.

Q.1. Attempt the following: (Any four) (20M)

1) How balancing is performed in AVL tree? Explain with the help of example?   CO1(R)
2) Write types of analysis of algorithm.   CO1(R)
3) What are performance characteristics of algorithm?   CO1(R)
4) List and explain characteristics of an algorithm.   CO1(R)
5) List and explain asymptotic notation.   CO1(R)
6) Write short note on Time complexity of an algorithm.   CO1(R)

Q.2. Attempt the following: (Any four) (20M)

1) Explain pre-order, in-order and post-order traversals with example.   CO2(U)
2) Write short note on threaded binary tree traversals.   CO3(R)
3) Describe AVL tree.   CO2(R)
4) Define predecessor and successor.   CO2(R)
5) Write DFS algorithm.   CO3(R)
6) Write Dijkstra's algorithm with example.   CO3(R)

Q.3. Attempt the following: (Any four) (20M)

1) Explain Krushal & Prim's algorithm.   CO4(U)
2) Explain classifications of algorithm in detail.   CO1(U)
3) Write short note on advantages and disadvantages of greedy method.   CO3(R)
4) Explain advantages of divide and conquer.   CO4(U)
5) Describe master the orem in detail.   CO4(R)
6) Explain the properties of dynamic programming strategy.   CO4(U)

Q.4. Attempt the following: (Any five) (15M)

1) Explain Knapsack problem.   CO4(U)
2) Write short note on divide & conquer strategy.   CO4(R)
3) Discuss minimal spanning tree?   CO2(U)
4) What is topological sorting?   CO3(R)
5) How to find shortest path from source node to other nodes using Dijkstra's algorithm?   CO2(R)
6) Discuss the Binary traversal techniques.   CO3(U)

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