MAY 2024

P/ID 17609/PCA3G/ PIT3G/PCATD

Time : Three hours Maximum : 80 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

1. What is control abstraction?
2. Define the term optimal solution.
3. What is Big “oh” notation?
4. State the average computing time of Quicksort algorithm.
5. State Knapsack problem.
6. What is string editing?
7. What is multistage graph?
8. What is BFS?
9. Give the purpose of Bounding function
10. Define state space tree.
11. What is meant by backtracking?
12. What is called NP-hard problem?

PART B — ($5 \times 6 = 30$ marks)

Answer any FIVE questions.

13. Explain how to validate an algorithm.

14. Discuss on time and space complexities.

15. Explain Tree vertex splitting.

16. Explain multistage graphs.

17. Discuss the various search techniques for graphs.

18. Illustrate Hamiltonian cycle with an example.

19. Explain comparison trees.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. How do you find the maximum and minimum in a given list using divide and conquer method? Explain with algorithm.

21. Use Quicksort algorithm to sort the following numbers in ascending order. Illustrate steps.

2, 14, 13, 25, 26, 37,38,49,44,56,59,61

22. Describe 0/1 Knapsack problem.

23. Explain the Graph coloring methods in detail.

24. Discuss on Lower bound theory.

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