

F 3622

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2008

Sixth Semester

Branch : Computer Science and Engineering

ALGORITHM ANALYSIS AND DESIGN (R)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Define space and time complexities.
2. What are properties of Algorithm ?
3. Define contrast Abstraction.
4. Explain the Divide and Conquer strategy with a suitable example.
5. Explain minimum cost spanning Tree.
6. What is the relevance of greedy method to solve Knapsack problem ?
7. Explain the complexity of optimal storage on Tapes.
8. What are Multi-stage graphs ?
9. Explain the principle of Backtracking.
10. Compare FIFO and LIFO.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. Design an Algorithm to evaluate "2ⁿ" in a computer and find the complexity of the Algorithm.

Or

12. Find the Asymptotic Upper Bound for the function :

(i) $T(n) = 2T(n/2) + n^2$; and (ii) $3T(n/2) + n$.

13. Explain Strassen's Matrix Multiplication and discuss its time complexity.

Or

14. Compare the Merge sort and Quick sort complexities.

15. Explain Kruskal's Algorithm and its complexity.

Or

16. Discuss an algorithm to find minimum cost spanning tree and its application and complexity.

Turn over

17. Explain the Travelling Salesman problem and its complexity.

Or

18. What are the various methods available in Tree-sort ?

19. Explain how to solve the 15 puzzle problem by backtracking.

Or

20. How to solve the problem of sum of subsets with explanation to the complexity in time ?

(5 × 12 = 60 marks)