F 7921 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2009

Sixth Semester

Branch : Computer Science and Engineering

ALGORITHM ANALYSIS AND DESIGN (R)

(Improvement/Supplementary)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 4 *marks.*

1. What is an algorithm ? Explain its properties.
2. Explain the recursive algorithm.
3. What do you mean by control abstraction ? Briefly explain about it.
4. Write a short note on Merge sort.
5. Describe control abstraction for greedy strategy.
6. Write Kruskal's algorithm for finding minimum cost spanning tree.
7. Explain the principle of optimality.
8. Write a technical note on "Adversary Arguments".
9. Compare FIFO and LIFO searches of the state spare tree.
10. Briefly explain the concepts of back tracking.

(10 × 4 = 40 marks)

Part B

Each question carries 12 *marks.*

11. (a) Write a short note on the following :—
    (i) Space and time complexity.
    (ii) Asymptotic notations.

Or

(b) With a suitable example, explain about deterministic and non-deterministic algorithms.

12. (a) Explain stress matrix multiplication method. Find the time complexity of the algorithm.

Or

(b) Analyse worst and average case computation and quick sort.

Turn over

13. (a) Discuss in detail about knapsack problem and optimal storage on Tapes.

Or

(b) Write a short note on :

(i) Prim's algorithm.

(ii) Job sequencing with deadlines.

14. (a) Explain the travelling salesman problem. Solve it using dynamic programming strategy.

Or

(b) With suitable examples, explain about Merging, Insertion and Selection sort in oracles and Adversary arguments.

15. (a) Discuss in detail about control abstraction and bounding function in backtracking.

Or

(b) Explain in detail about Branch and Bound techniques in Back tracking.

(5 × 12 = 60 marks)