15/12/14 SE - Comp. IV (old) AOAD

QP Code :14465

(OLD COURSE)

(3 Hours) **[Total Marks : 100**

N. B. : (1) Question **No.1** is **compulsory.**
(2) Solve **any four** form remaining
(3) **Figures** to right **indicate** marks.

1. (a) Explain insertion sort Algorithm show one example solved by insertion sort. **10**
   (b) Explain a searching technique using divide and conquer strategy. What are other searching techniques? **10**

2. (a) What are different collision handling techniques in hashing? Explain in detail. **10**
   (b) Write Kruskal's algorithm for minimum spanning tree. **10**

3. (a) Explain non recursive Quicksort Algorithm with example. **10**
   (b) Give algorithm for BFS. Take a sample graph and show travesal by BFS Technique. **10**

4. (a) What is warshall's algorithm for shortest path? Explain with example. **10**
   (b) What is backtracking strategy of problem solving? List examples which are solved by Backtracking. **10**

5. (a) Explain knapsack problem.How it is solved by greedy approach? **10**
   (b) What is strasten's matrix multiplication? Explain Algorithm. **10**

6. (a) Write a note on Travelling salesperson problem. How this problem is solved? Devise Algorithm. **10**
   (b) Write difference between following Algorithmic strategies. **10**
      (i) Greedy Vs Dynamic
      (ii) Greedy Vs Dvide and conquer

7. (a) Write short notes on **Any Two :-** **20**
      (i) N-queens problem
      (ii) NP-hard and NP- complete problems
      (iii) Binary search Tree Insertion
