

Day: Monday  
Date: 27/05/2019

S-2019-2750

Time: 02.30 PM TO 05.30 PM  
Max Marks.: 60

N.B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.
- 4) Draw neat and labeled diagrams wherever necessary.

Q.1 What are linear data structures? How are they further classified? Explain with suitable example. (10)

OR

Q.1 State and explain in detail the asymptotic notations used for mathematical analysis of algorithms. (10)

Q.2 What are the procedures to be implemented when applying brute force search? State and analyze any algorithm which uses brute force technique. (10)

OR

Q.2 Which are the searching methods for graphs? Explain any one which uses exhaustive search technique. (10)

Q.3 What is a convex-hull problem? How to solve it using a divide and conquer algorithm? Compare the performance of this algorithm with that when solved using brute-force technique. (10)

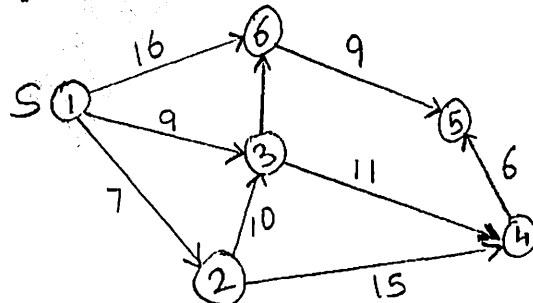
OR

Q.3 State, explain and analyze the algorithm for Strassen's matrix multiplication. (10)

Q.4 Explain how 0/1 knapsack problem can be solved using dynamic programming technique. (10)

OR

Q.4 Find the shortest path from S to all vertices using Dijkstra's Algorithm. (10)



Q.5 Explain Backtracking method of problem solving. How N queens problem can be solved using Backtracking. (10)

OR

Q.5 What is branch and bound algorithm design method? Solve 0/1 knapsack problem using branch and bound. (10)

Q.6 Write and explain an algorithm for deadlock detection and deadlock avoidance. (10)

OR

Q.6 What is resource allocation graph algorithm? Explain with suitable example. (10)

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