SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc.(CS) - END SEMESTER EXAMINATIONS APRIL - 2023
SEMESTER - II
20PCSCT2004 - Design and Analysis of Algorithm

Total Duration : 2 Hrs. 30 Mins.   Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. Describe the divide and conquer algorithm with time complexity.

2. Explain the Knapsack problem with an example of maximum input as 3.

3. Solve a Graph with given set of six vertices and edges using the connected components.

4. Illustrate the Hamiltanion cycle for a graph with set of 5 vertices.
   Use a C program for implementation.

5. Apply a solution for TSP using NP-complete problem procedure.

6. Apply the time and space complexity for any two sorting algorithms using a C program.

7. Compute the complexity analysis for single source shortest path using Dijkstra's algorithm.

8. Determine an algorithm for sum of subset procedure using recursion.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks$)$

9. Describe algorithmic conventions in pseudocode convention procedure.

10. Apply the divide and conquer procedure for quick sort.

11. Examine the searching techniques for graphs using linked list.

12. Criticize the 8 Queen problem with suitable example.

Part B

II - Compulsory question $(1 \times 10 = 10$ Marks$)$

13. Discriminate the comparisons trees with suitable example.

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