MODULE 1 - INTRODUCTION

1. Explain Space / Time / Complexity in detail.

2. Explain insertion / Selection Sort and derive its complexity.

3. To sort the given set of number using insertion sort and also show the result of each pass.

   ‹11,7,17,3,9,29,85,9›

4. Explain recursion with an example (Factorial)

5. Short Notes

   O notation , Ω notation , θ notation

MODULE 2 - DIVIDE & CONQUER APPROACH

1. Explain binary search.

(isme recursion technique padhna taaki recursion me use kar sako)

2. Explain merge sort and sort following numbers.

‹100,20,38,14,48,07,17,57,93,98›

3.Finding the min max algorithm

MODULE 3 - GREEDY METHOD APPROACH

1. Job sequencing with deadline (2 Examples)
2. 0/1 knapsack & Fractional knapsack / Solve

   Example

   N=4 , M=21 , (P1, P2, P3, P4) = (2, 5, 81, 1) , (W1, W2, W3, W4) = (10, 15, 6, 9)

3. Kruskal's and Prim's examples (Minimum Spanning Tree).

   (Solution me 3 - 3 each padhane hai)

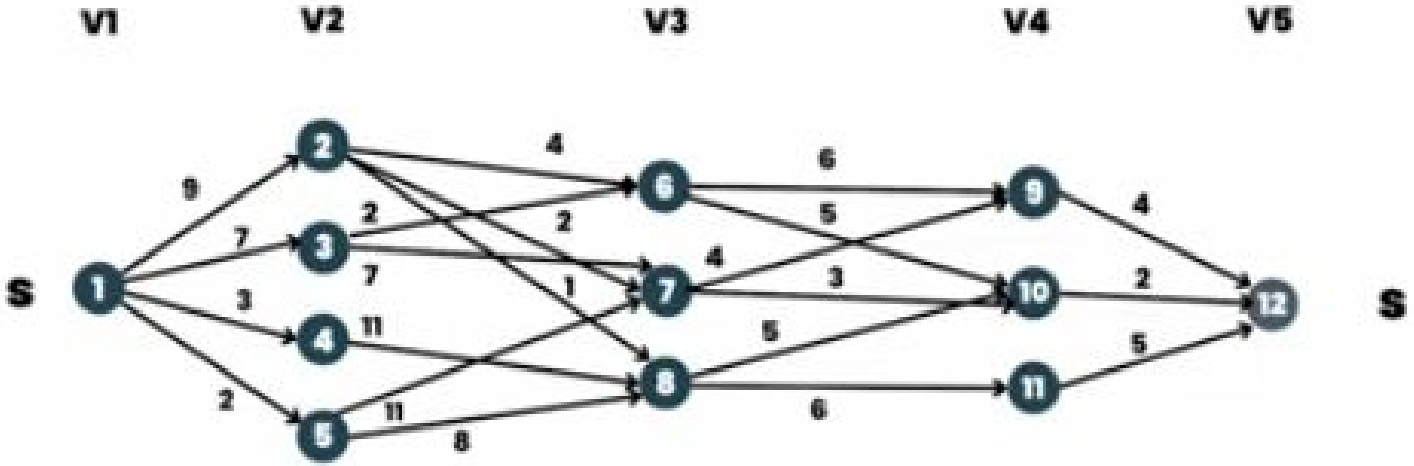
4. General method or explain greedy algorithm.

MODULE 4 – DYNAMIC PROGRAMMING APPROACH

1. General Method Dynamic Programming.

2. Principle of optionality + Dynamic Programming V/S Divide & Conquer

3. Multistage graph explain + Sum



4. Single source shortlist path (Dijkstra's) (Sums)

5. Bellman ford algorithm (Sums)

MODULE 5 - BACKTRACKING & BRANCH AND BOUND

1. Algorithm N- Queen 's Problem (8-Queen's)
2. Sum of Subsets.

   N=4 , M=15 , W= {3, 5, 6, 7}

3. 15 - puzzle problem
4. Travelling Salesperson

MODULE 6 - STRING MATCHING

1. KMP (Knuth-Morris-Pratt) algorithm in detail

2. Rabin Karp (Basics)

Divide & Conquer Approach

Greedy Method Approach

Dynamic Programming Approach

Introduction

String Matching

Backtracking, Branch & Bound