

## UNIT-III

### GREEDY METHOD

- 1) Explain Greedy Method in detail. **(BTL – II,V)**
- 2) Find optimal solution for the following Knapsack problem  $n = 7; m = 15$ ; profits and weights are  $(p_1, p_2, p_3, p_4, p_5, p_6, p_7) = (10, 5, 15, 7, 6, 18, 3)$   
 $(w_1, w_2, w_3, w_4, w_5, w_6, w_7) = (4, 3, 6, 6, 2, 5, 1)$ . **(BTL – I)**
- 3) Find optimal solution for the following Knapsack problem  $n = 7; m = 15$ ; profits and weights are  $(p_1, p_2, p_3, p_4, p_5, p_6, p_7) = (10, 5, 15, 7, 6, 18, 3)$   
 $(w_1, w_2, w_3, w_4, w_5, w_6, w_7) = (2, 3, 5, 7, 1, 4, 1)$ . **(BTL – I)**
- 4) Write pseudo code algorithm for Knapsack problem and an example. **(BTL – I)**
- 5) Find an optimal solution and maximum profit for the following Greedy Job Sequencing with deadlines let  $n = 4$  profits and deadlines are  $(p_1, p_2, p_3, p_4) = (100, 10, 5, 27)$   
 $(D_1, D_2, D_3, D_4) = (2, 1, 2, 1)$ . Write pseudo code algorithm for Greedy Job Sequencing with deadlines. **(BTL – I)**
- 6) Find an optimal solution and maximum profit for the following Greedy Job Sequencing with deadlines let  $n = 4$  profits and deadlines are  $(p_1, p_2, p_3, p_4, p_5) = (20, 13, 10, 4, 1)$   
 $(D_1, D_2, D_3, D_4, D_5) = (2, 1, 2, 3, 3)$ . Write pseudo code algorithm for Greedy Job Sequencing with deadlines. **(BTL – I)**
- 7) Explain minimum spanning tree using Prim's algorithm with example and discuss time complexity. **(BTL – II,V,VI)**
- 8) Write pseudo code algorithm for Prim's and discuss time complexity. **(BTL – I,VI)**
- 9) Explain minimum spanning tree using Kruskal's algorithm with example and discuss time complexity. **(BTL – II,V,VI)**
- 10) Write pseudo code algorithm for Kruskal's and discuss time complexity. **(BTL – I,VI)**
- 11) Differences between Prim's and Kruskal's minimum spanning algorithms. **(BTL – IV)**
- 12) Discuss the single source shortest paths algorithm with a suitable example. **(BTL – VI)**
- 13) Discuss the Dijkstra's single source shortest path algorithm and derive the time complexity of this algorithm. **(BTL – VI)**
- 14) Discuss Optimal Merge patterns with examples. **(BTL – VI)**
- 15) Write pseudo code algorithm for Optimal Merge Pattern and discuss time complexity. **(BTL – I,VI)**
- 16) Differences between Greedy Method and Divide and Conquer. **(BTL – IV)**