Department of Computer Science and Information Technology

**Assignment-3**

**Design and Analysis of Algorithm**

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| **Q. No.** | **Questions** | **CO** | **Bloom’s level** |
|  | Consider the following instance for knapsack problem. Find the solution using Greedy method:  N= 10, W=130  P [] = {21, 31, 43, 53, 41, 63, 65, 75}  V [] = {11, 21, 31, 33, 43, 53, 65, 65} | CO3 | L3 |
|  | Apply the greedy single source shortest path algorithm on the following graph: | CO3 | L4 |
|  | Define spanning tree. Write Kruskal’s algorithm for finding minimum cost spanning tree. Describe how Kruskal’s algorithm is different from Prim’s algorithm for finding minimum cost spanning tree. | CO3 | L4 |
|  | What are greedy algorithms? Explain their characteristics? | CO3 | L2 |
|  | What is Minimum Cost Spanning Tree? Explain Kruskal’s Algorithm and Find MST of the Graph. Also write its Time-Complexity. | CO3 | L4 |
|  | . Define feasible and optimal solution. | CO3 | L1 |
|  | Given the six items in the table below and a Knapsack with Weight 100, what is the solution to the Knapsack problem in all concepts. I.e. explain greedy all approaches and find the optimal solution. | CO3 | L3 |
|  | What do you mean by convex hull? Describe an algorithm that solves the convex hull problem. Find the time complexity of the algorithm. | CO3 | L3 |