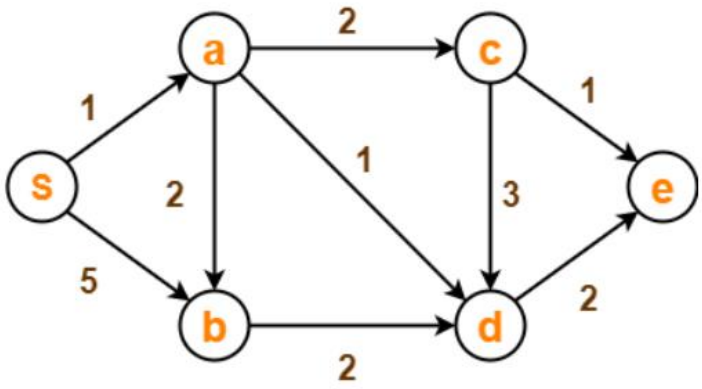
DAA KCS-503

ASSIGNMENT

Date:25-11-2020

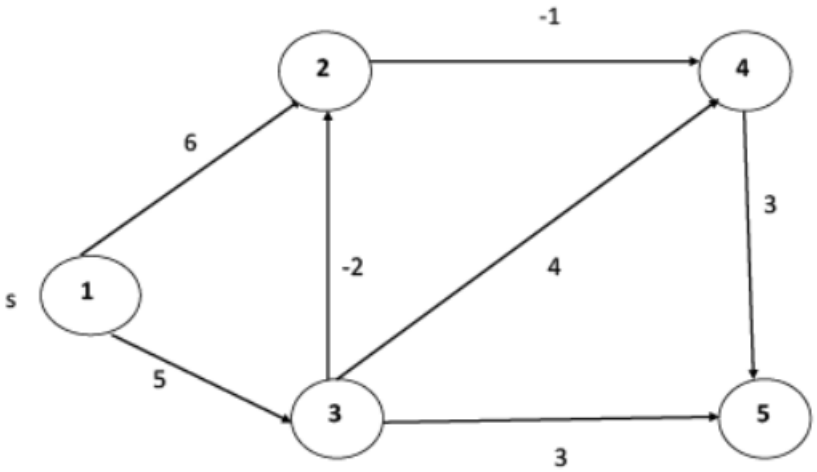
Que 1.

Using Dijkstra's Algorithm, find the shortest distance from source vertex 'S' to remaining vertices in the following graph-

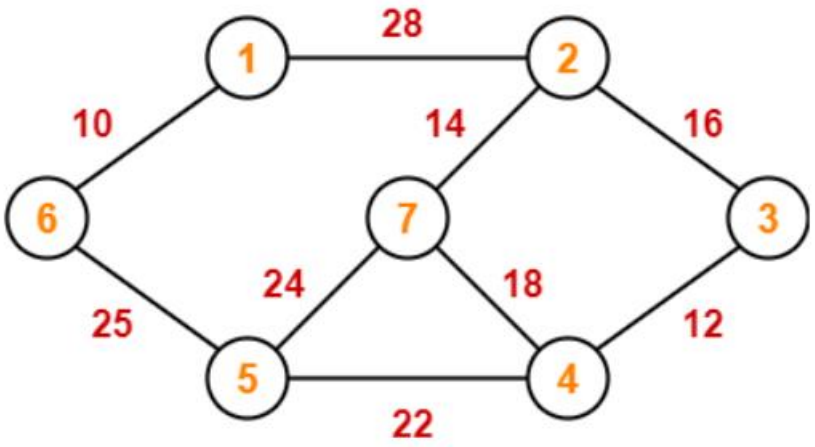


Also, write the order in which the vertices are visited.

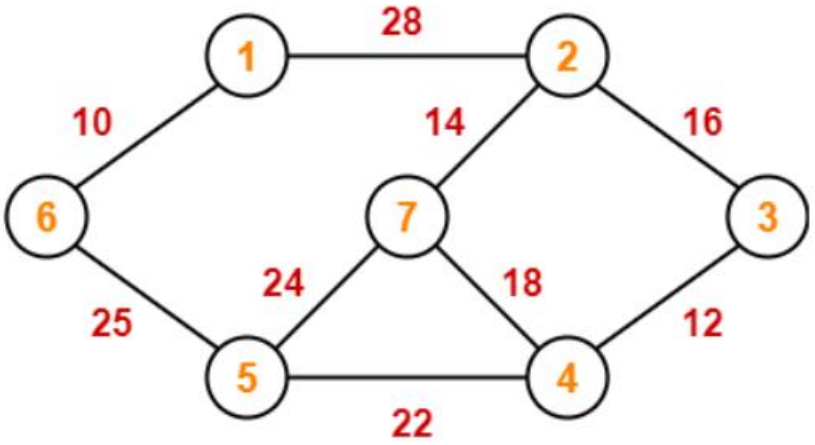
Que 2. Using Bellman's Ford algorithm, find the shortest path from source vertex 's' to the remaining vertices in the following graph.



Que 3. Find the Minimum spanning tree using Prim's Algorithm.

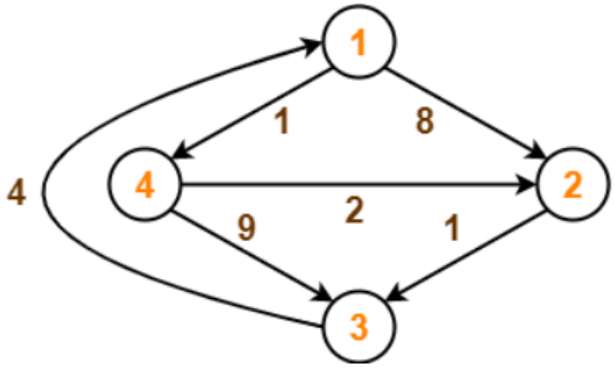


Que 4. Find the minimum spanning tree using the Kruskal's Algorithm.



Que 5.

Consider the following directed weighted graph-



Using Floyd Warshall Algorithm, find the shortest path distance between every pair of vertices.

Que 6. Find the optimal solution for the 0/1 knapsack problem making use of dynamic programming approach.

Consider-

$$n = 4$$

$$w = 5 \text{ kg}$$

$$(w1, w2, w3, w4) = (2, 3, 4, 5)$$

$$(b1, b2, b3, b4) = (3, 4, 5, 6)$$