

**SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL**

Near NH-55, Banamali Prasad – 759001

**Quiz-VI**

**Full Marks-05**

**Duration-05 Min**

**Subject with Code:** DAA\_LAB (CSPC2206)

**Year & Semester:** 2nd & 4th

**Course & Branch**: B. Tech. & CSE

**Name: Registration No-**

**Roll No-**

Answer All Questions

**Tick the Correct Answer/Answers**

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| **Course Outcome** | **Total Marks** | **Marks Secured** | **Signature of Evaluator** |
| **CO3** | **05** |  |  |

**1.Kruskal’s algorithm is used to find: [0.5 Mark][CO3][L3]**  
a) Shortest path between nodes  
b) Minimum Spanning Tree (MST)  
c) Maximum Spanning Tree  
d) Topological ordering

**2.Kruskal’s algorithm is based on which algorithmic technique? [0.5 Mark][CO3][L3]**  
a) Greedy method  
b) Dynamic programming  
c) Divide and conquer  
d) Backtracking

**3.Kruskal’s algorithm works best with which graph representation?[0.5 Mark][CO3][L3]**  
a) Adjacency matrix  
b) Adjacency list  
c) Edge list  
d) Linked list

**4.Which data structure is used to detect cycles in Kruskal’s algorithm? [0.5 Mark][CO3][L3]**  
a) Stack  
b) Queue  
c) Disjoint Set (Union-Find)  
d) Binary Tree

**5.In Kruskal’s algorithm, edges are considered in: [0.5 Mark][CO3][L3]**  
a) Random order  
b) Decreasing order of weights  
c) Increasing order of weights  
d) DFS traversal order

**6.What is the time complexity of Kruskal’s algorithm (using Union-Find with path compression)? [0.5 Mark][CO3][L3]**  
a) O(E log V)  
b) O(V²)  
c) O(E²)  
d) O(V log E)

**7.Kruskal’s algorithm can be applied to: [0.5 Mark][CO3][L3]**  
a) Directed graphs only  
b) Undirected graphs only  
c) Both directed and undirected graphs  
d) Trees only

**8.Which of the following is NOT a step in Kruskal's algorithm?[0.5 Mark][CO3][L3]**  
a) Sort all edges  
b) Add edges to MST if they don’t form a cycle  
c) Remove the heaviest edge in a cycle  
d) Use union-find to detect cycles  
**Answer:** c) Remove the heaviest edge in a cycle

**9.When does Kruskal’s algorithm stop? [0.5 Mark][CO3][L3]**  
a) When all edges have been added  
b) When a cycle is found  
c) When (V - 1) edges are added to MST  
d) When the adjacency list is empty

**10.Which of the following algorithms is most similar to Kruskal’s algorithm in purpose? [0.5 Mark][CO3][L3]**  
a) Dijkstra’s algorithm  
b) Bellman-Ford algorithm  
c) Prim’s algorithm  
d) Floyd-Warshall algorithm