

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

Near NH-55, Banamali Prasad – 759001

**Quiz-V**

**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. **Dijkstra’s algorithm is used to find:**  **[0.5 Mark][CO3][L3]**

a) Shortest path between all pairs of nodes  
b) Shortest path from a single source to all other vertices  
c) Longest path in a graph  
d) Minimum spanning tree

**2.What is the time complexity of Dijkstra’s algorithm using a min-priority queue (binary heap)? [0.5 Mark][CO3][L3]**  
a) O(V²)  
b) O(V + E log V)  
c) O(E log V)  
d) O(VE)

**3.Dijkstra’s algorithm works only when:** **[0.5 Mark][CO3][L3]**

a) The graph contains no cycles  
b) The graph is undirected  
c) All edge weights are non-negative  
d) The graph is complete

**4.Which data structure is typically used to implement the priority queue in Dijkstra’s algorithm? [0.5 Mark][CO3][L3]**  
a) Stack  
b) Queue  
c) Binary Heap  
d) Hash Table

**5.In Dijkstra’s algorithm, what happens if the graph contains negative weight edges? [0.5 Mark][CO3][L3]**  
a) It still finds the correct shortest path  
b) It may produce incorrect results  
c) It works faster  
d) It throws an error

**6.What is initialized as 0 in Dijkstra’s algorithm? [0.5 Mark][CO3][L3]**  
a) All vertex distances  
b) Source vertex distance  
c) Edge weights  
d) Graph weight

**7.Which algorithm is more suitable for graphs with negative edge weights? [0.5 Mark][CO3][L3]**  
a) Dijkstra’s Algorithm  
b) Prim’s Algorithm  
c) Bellman-Ford Algorithm  
d) Kruskal’s Algorithm

**8.Which of the following is a limitation of Dijkstra's algorithm?[0.5 Mark][CO3][L3]**  
a) It doesn’t work for cyclic graphs  
b) It cannot handle graphs with more than 100 vertices  
c) It cannot handle negative edge weights  
d) It is not efficient for sparse graphs

**9.Which of the following is true about Dijkstra's algorithm? [0.5 Mark][CO3][L3]**  
a) It finds the longest path  
b) It is used in dynamic programming  
c) It always gives an optimal solution for positive weights  
d) It can solve NP-complete problems

**10.What is the worst-case time complexity of Dijkstra’s algorithm using an adjacency matrix? [0.5 Mark][CO3][L3]**  
a) O(V + E)  
b) O(V log V)  
c) O(V²)  
d) O(E log V)