

Learning4help by Waqas

Asslam-o-Alaikum! In this file we'll provide you **CS502 quiz 4 2023 Important Finalterm MCQs. Must Prepare Before Finalterm Exams.** Verify Answers yourself too. If you found mistake then inform me.

If you found mistake then let us know.

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Dijkstra's Algorithm is used to solve _____ problems.

Select the correct option

- All-pair shortest path
- Single-source shortest path
- Sorting & searching
- Multi-source shortest path

The screenshot shows a web browser window with the URL vulms.vu.edu.pk/Quiz/QuizQuestion.aspx. The question text reads: "From given algorithms which one considered as best for finding the shortest-path:". Below the question is a "Select the correct option" section with four radio button choices: BFS, Bellman-Ford algorithm, Dijkstra's algorithm (which is selected), and DFS. The browser's taskbar at the bottom shows several open applications including File Explorer, a Quiz window, Bandicam, and various system icons. The system clock indicates the time is 12:49 PM on Tuesday, 7/25/2023, with a temperature of 30°C.

vuims.vu.edu.pk/Quiz/QuizQuestion.aspx

Select the correct option

- Kruskal algorithm is multiple source technique for finding MST.
- Kruskal's algorithm is used to find minimum spanning tree of a graph, time complexity of this algorithm is $O(EV)$
- Both I and II
- Kruskal's algorithm (choose best non-cycle edge) is better than Prim's (choose best Tree edge) when the graph has relatively few edges.

File Explorer | Quiz - Ope... | Bandicam | 30°C | 12:48 PM Tuesday 7/25/2023

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In the shortest-paths problem, we are given a weighted of _____ $G = (V, E)$.

Select the correct option

- Un-directed graph
- Directed graph
- Line graph
- Weighted graph

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In Prim's algorithm, if the color of a vertex is _____, then it is in S otherwise not.

Select the correct option

- Blue
- Gray
- White
- Black

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Finding the faster result of the shortest path from u to v for every pair of vertices u and v we use _____.

Select the correct option

- Single-pairs shortest-paths problem
- both I and II
- Two-pairs shortest-paths problem
- All-pairs shortest-paths problem

Prim's algorithm is based on ----- strategy.

Select the correct option

- Exponential
- Divide and Conquer
- Greedy
- Dynamic programming

Windows taskbar showing search, File Explorer, Quiz - Ope..., Bandicam, and system tray with 30°C, ENG, and Tuesday 7/25/2023.

The breadth-first-search algorithm is a shortest-path algorithm that works on ----- graphs.

Select the correct option

- Weighted
- Un-directed
- Un-weighted
- Directed

Windows taskbar showing search, File Explorer, Quiz - Ope..., Bandicam, and system tray with 30°C, ENG, and Tuesday 7/25/2023.

In Bellman-Ford Algorithm, path consists of at most _____ edges.

Select the correct option

- E - 1
- V - 1
- V + 1
- E + 1

Dijkstra's algorithm :

Select the correct option

- Has greedy approach to compute single source shortest paths to all other vertices
- Has greedy approach to find all shortest paths
- Has both greedy and Dynamic approach to find all shortest paths
- Has both greedy and dynamic approach to compute single source shortest paths to all other vertices.

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A graph may contain -----.

Select the correct option

- Exactly one MST
- More than one MST
- No MST
- One or zero MST

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In Kruskal's algorithm, the next ----- is not added to viable set A, if its adding induce a/an cycle.

Select the correct option

- Vertex
- Tree
- Edge
- Cycle

The process of updating estimates in Dijkstra's algorithm is called_____.

Select the correct option

- Updating
- Amendment
- Relaxation
- Insertion

Windows taskbar showing search, File Explorer, Quiz - Ope..., Bandicam, and system tray with temperature 29°C and date Monday 7/24/2023.

In Dijkstra's algorithm the estimated value of source vertex $d[s]$ is:

Select the correct option

- Greater than 0
- Equal to 1
- Greater than 1
- Equal to 0

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Floyd-Warshall Algorithm is based on _____

Select the correct option

- Greedy Approach
- Dynamic Programming
- Complexity theory
- Divide and Conquer

Search File Explorer Quiz - Ope... Bandicam 29°C 8:46 PM Monday 7/24/2023

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Problems such as the shortest route between cities can be solved efficiently by modeling the road map as a _____

Select the correct option

- Linked list
- Graph
- Stack
- Tree

Search File Explorer Quiz - Ope... Bandicam 29°C 8:46 PM Monday 7/24/2023

What is the time complexity to extract a vertex from the priority queue in Prim's algorithm?

Select the correct option

- $O(\log V)$
- $O(V)$
- $O(V+E)$
- $O(\log E)$

Which of the following is used in the data structure for implementing Dijkstra's Algorithm?

Select the correct option

- Circular queue
- Stack's
- Priority queue
- Max heap

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Which of the following statement is true.

Select the correct option

- Kruskal's algorithm is used to find minimum spanning tree of a graph, time complexity of this algorithm is $O(EV)$
- Both I and II
- Kruskal's algorithm (choose best non-cycle edge) is better than Prim's (choose best Tree edge) when the graph has relatively few edges.
- Kruskal algorithm is multiple source technique for finding MST.

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In which algorithm, information of shortest path is propagated sequentially along each shortest path in the graph.

Select the correct option

- Dijkstra's
- Prim's
- Bellman-Ford
- Brute-force technique

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In Prim's algorithm, we start with the _____ vertex r ; it can be any vertex.

Select the correct option

- Leaf
- Pivot
- negative
- Root

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In Prim's algorithm, we start with the _____ vertex r ; it can be any vertex.

Select the correct option

- Leaf
- Pivot
- negative
- Root

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Dijkstra's algorithm :

Select the correct option

- Has both greedy and Dynamic approach to find all shortest paths
- Has greedy approach to find all shortest paths
- Has both greedy and dynamic approach to compute single source shortest paths to all other vertices.
- Has greedy approach to compute single source shortest paths to all other vertices

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Edge weights can be interpreted as distance -----

Select the correct option

- in breadth-First Search
- in Queue's
- in the shortest-paths
- in depth-First Search

Question # 2 of 10 (Start time: 07:32:39 PM, 24 July 2023) Total Marks: 1

In Bellman-Ford Algorithm, relaxation applies to every edge of the graph and repeat this _____ time.

Select the correct option

- E + 1
- V + 1
- E - 1
- V - 1

For each vertex $u \in (V - S)$, we associate a key _____.

Select the correct option

- key[v]
- key[v-s]
- key[s]
- key[u]

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Kruskal's algorithm (choose best non-cycle edge) is better than Prim's (choose best tree edge) when the _____ has relatively few _____.

Select the correct option

- graph, branches
- tree, edges
- graph, edges
- tree, branches

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Kruskal's algorithm (choose best non-cycle edge) is better than Prim's (choose best tree edge) when the _____ has relatively few _____.

Select the correct option

- graph, branches
- tree, edges
- graph, edges
- tree, branches

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In Prim's algorithm, if there is no edge from u to a vertex in S , we set the key value to _____.

Select the correct option

-
-
-
-

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Keeping in mind the shortest-path, if given scenarios occur in computer networks like the internet where data packets have to be routed. The vertices are _____ and Edges are _____ which may be wired or wireless.

Select the correct option

- Routers, communication links
- Communication links, routers
- Internet, routers
- Routers, internet

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Question # 7 of 10 (Start time: 01:34:02 PM, 24 July 2023) Total Marks: 1

The tricky part of _____ algorithm(s) is/are, how to detect whether the addition of an edge will create a cycle in viable set A.

Select the correct option

- Both Krusal's and Prim's
- Kruskal's
- DFS
- Prim's

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Dijkstra's algorithm is a simple _____ algorithm for computing the single-source shortest-paths to all other vertices.

Select the correct option

- Brute-Force
- Divide and conquer
- Greedy
- Bellman-Ford

Question # 5 of 10 (Start time: 01:31:24 PM, 24 July 2023) Total Marks: 1

In Dijkstra's algorithm, initially the estimated value from source vertex to any vertex v is:

Select the correct option

- Minus one (-1)
- Zero (0)
- Infinity (∞)

Question # 4 of 10 (Start time: 01:30:30 PM, 24 July 2023) Total Marks: 1

Bellman-Ford algorithm is slower than_____.

Select the correct option

- Prim's
- Brute-force technique
- Dijkstra's
- Graph Algorithm

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Bellman-Ford algorithm is slower than_____.

Select the correct option

- Prim's
- Brute-force technique
- Dijkstra's
- Graph Algorithm

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Dijkstra's Algorithm cannot be applied on _____.

Select the correct option

- unweighted graphs
- directed and weighted graphs
- graphs having negative weight function
- undirected and unweighted graphs

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The running time of Bellman-Ford Algorithm is _____.

Select the correct option

- $\theta(E + E)$
- $\theta(VE)$
- $\theta(V + E)$
- $\theta(V + V)$

Windows taskbar: Search, All Comb..., Some Pre..., Quiz 4, Quiz - Op..., Bandicam, CS502 Quiz ..., LMS Login.L..., Internet Do..., 34°C, ENG, Monday 7/24/2023, 1:28 PM

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