

# TCET 2026 Test Series:

## Questions:

### Technical

Q.1) Which of the following is true about a linked list?

- [A] It stores elements in contiguous memory
- [B] It stores elements in non-contiguous memory
- [C] It uses arrays for storage
- [D] It stores elements in a circular way

Q.2) What is the main advantage of a linked list over an array?

- [A] Dynamic memory allocation
- [B] Constant time access
- [C] Fixed size
- [D] Random access

Q.3) What does a singly linked list consist of?

- [A] Nodes with two fields: data and a reference to the next node
- [B] Nodes with data only
- [C] Nodes with data and a reference to both next and previous nodes
- [D] Nodes with pointers only

Q.4) In a singly linked list, how do you access the last element?

- [A] By traversing the list from the head
- [B] By accessing the pointer directly
- [C] By reversing the list
- [D] By using the tail pointer

Q.5) What is the time complexity for inserting an element at the beginning of a singly linked list?

- [A]  $O(1)$
- [B]  $O(n)$
- [C]  $O(\log n)$
- [D]  $O(n^2)$

Q.6) Which of the following is not a type of linked list?

- [A] Binary linked list
- [B] Singly linked list
- [C] Doubly linked list

[D] Circular linked list

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Q.7) Which operation is performed to remove an element from the end of a singly linked list?

[A] Pop

[B] Delete

[C] Push

[D] Traversal

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Q.8) What is the primary disadvantage of a singly linked list?

[A] It requires more memory than an array

[B] It does not support fast random access

[C] It cannot grow dynamically

[D] It is slower for accessing elements

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Q.9) What is a doubly linked list?

[A] A list where each node has a reference to the next and previous node

[B] A list where each node has data only

[C] A list that contains only unique values

[D] A list with cyclic references

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Q.10) What happens when you attempt to access a node that is out of bounds in a linked list?

[A] Null reference error

[B] Index out of bounds error

[C] Memory leak

[D] It returns the last node

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Q.11) Which operation is used to reverse a linked list?

[A] Reversal

[B] Traversal

[C] Push

[D] Pop

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Q.12) Which of the following is true about a circular linked list?

[A] The last node points back to the first node

[B] The first node points back to the last node

[C] Each node points to a random node

[D] None of the above

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Q.13) What is the space complexity of a singly linked list?

[A]  $O(n)$

[B]  $O(1)$

[C]  $O(\log n)$

[D]  $O(n^2)$

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Q.14) How can you detect a loop in a linked list?

[A] By using Floyd’s cycle-finding algorithm

[B] By counting nodes

[C] By using hash tables

[D] By checking the next pointer

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Q.15) What is the primary use case for a linked list?

[A] Dynamic memory allocation

[B] Random access storage

[C] Static memory management

[D] Data compression

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Q.16) Which of the following is a property of a binary tree?

[A] Each node has at most two children

[B] Each node has at most one child

[C] Each node has more than two children

[D] Nodes are arranged in ascending order

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Q.17) What is the height of a binary tree?

[A] The number of edges on the longest path from root to leaf

[B] The number of nodes

[C] The number of leaves

[D] The number of internal nodes

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Q.18) In a binary search tree (BST), which of the following is true?

[A] Left child < parent < right child

[B] Left child > parent < right child

[C] Left child > parent > right child

[D] Right child < parent < left child

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Q.19) Which of the following traversal methods visits the root node last?

[A] Postorder

[B] Preorder

[C] Inorder

[D] Level-order

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Q.20) What is the worst-case time complexity of searching in a balanced binary search tree?

[A]  $O(\log n)$

[B]  $O(n)$

[C]  $O(n \log n)$

[D]  $O(1)$

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Q.21) What is a full binary tree?

[A] A tree where every node has either 0 or 2 children

[B] A tree where every node has at most two children

[C] A tree where each node has 3 or more children

[D] A tree where every node has exactly one child

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Q.22) Which of the following is true about a heap?

[A] It is a complete binary tree

[B] It is a binary search tree

[C] It has no specific order

[D] It is not a binary tree

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Q.23) In a binary tree, which traversal method gives nodes in increasing order?

[A] Inorder

[B] Preorder

[C] Postorder

[D] Level-order

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Q.24) What is a balanced tree?

[A] A tree where the height difference between the left and right subtrees of any node is at most 1

[B] A tree where the left subtree is always smaller than the right subtree

[C] A tree where each node has exactly two children

[D] A tree with equal number of left and right nodes

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Q.25) Which algorithm is used to construct a balanced binary tree?

[A] AVL tree algorithm

[B] Heapify

[C] Quick Sort

[D] Merge Sort

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Q.26) What is a red-black tree?

[A] A self-balancing binary search tree

[B] A tree with red and black nodes

[C] A tree with nodes arranged in a balanced way

[D] None of the above

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Q.27) Which of the following is true about a perfect binary tree?

[A] All internal nodes have two children and all leaves are at the same level

[B] All nodes have only one child

[C] All leaves are at different levels

[D] It is a full binary tree

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Q.28) What is the space complexity of a binary tree?

[A]  $O(n)$

[B]  $O(\log n)$

[C]  $O(1)$

[D]  $O(n^2)$

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Q.29) What does the height of a tree represent?

[A] The longest path from the root to a leaf node

[B] The number of nodes in the tree

[C] The number of internal nodes

[D] The number of leaf nodes

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Q.30) Which of the following operations is most efficiently performed on a binary search tree?

[A] Searching for an element

[B] Finding the height of the tree

[C] Inserting an element

[D] Deleting an element

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Q.31) Which of the following is not a characteristic of a graph?

[A] A graph can be directed or undirected

[B] A graph can be cyclic or acyclic

[C] A graph always contains a root node

[D] A graph consists of vertices and edges

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Q.32) What is the primary use of depth-first search (DFS) in a graph?

[A] Exploring all possible paths

[B] Finding the shortest path

[C] Finding a specific node

[D] Determining if a graph is bipartite

Q.33) Which data structure is commonly used to implement a graph?

[A] Queue

[B] Stack

[C] Array

[D] Adjacency list

Q.34) What is a directed graph?

[A] A graph in which edges have a direction

[B] A graph in which edges do not have a direction

[C] A graph with only weighted edges

[D] A graph with only one vertex

Q.35) What is the time complexity of BFS for a graph with V vertices and E edges?

[A]  $O(V + E)$

[B]  $O(V^2)$

[C]  $O(E)$

[D]  $O(V)$

Q.36) What is the difference between a tree and a graph?

[A] A tree is a type of graph with no cycles

[B] A tree is a graph with a root node

[C] A tree is a connected graph

[D] All of the above

Q.37) Which algorithm is used to find the shortest path in a graph?

[A] Dijkstra's algorithm

[B] Floyd-Warshall algorithm

[C] Prim's algorithm

[D] DFS

Q.38) Which of the following is true about an acyclic graph?

[A] It contains no cycles

[B] It contains only directed edges

[C] It contains no vertices

[D] It contains only a single edge

Q.39) What is the space complexity of storing a graph in an adjacency matrix?

[A]  $O(V^2)$

[B]  $O(V + E)$

[C]  $O(V)$

[D]  $O(E)$

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Q.40) Which of the following is used to detect cycles in a directed graph?

[A] Topological sort

[B] DFS

[C] BFS

[D] Dijkstra,Âs algorithm

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Q.41) What does a minimum spanning tree (MST) represent?

[A] The smallest set of edges that connect all the vertices in a graph

[B] The shortest path between two vertices

[C] The path with the least number of edges

[D] The largest possible subgraph

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Q.42) Which of the following algorithms is used to find a minimum spanning tree?

[A] Kruskal,Âs algorithm

[B] Dijkstra,Âs algorithm

[C] Floyd-Warshall algorithm

[D] DFS

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Q.43) What is the degree of a vertex in a graph?

[A] The number of edges connected to the vertex

[B] The number of vertices connected to the vertex

[C] The number of paths in the graph

[D] The number of vertices in the graph

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Q.44) Which of the following is true about a bipartite graph?

[A] It can be colored using two colors

[B] It contains a cycle of odd length

[C] It has no edges

[D] It is a directed graph

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Q.45) What is the time complexity of searching for an element in a singly linked list?

[A]  $O(1)$

[B]  $O(n)$

[C]  $O(\log n)$

[D]  $O(n^2)$

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Q.46) What is the main disadvantage of a doubly linked list?

[A] It uses more memory

[B] It is slower than singly linked list

[C] It cannot be traversed

[D] It does not support removal operations

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Q.47) What happens when you delete the head node in a singly linked list?

[A] The next node becomes the head

[B] The last node is removed

[C] The list becomes empty

[D] The list becomes circular

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Q.48) Which of the following is true about a binary search tree (BST)?

[A] It is always balanced

[B] Each node has at most one child

[C] The left child is smaller than the parent

[D] The right child is always greater than the parent

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Q.49) What is the inorder traversal of a binary tree?

[A] Visit the root, then left subtree, then right subtree

[B] Visit the left subtree, then root, then right subtree

[C] Visit the right subtree, then left subtree

[D] Visit the root first

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Q.50) Which of the following algorithms is used to balance a binary search tree?

[A] AVL tree rotations

[B] Quick Sort

[C] Heapify

[D] Merge Sort

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# TCET 2026 Test Series:

## Answers:

### Technical



Q.1)B	Q.2)A	Q.3)A	Q.4)A	Q.5)A	Q.6)A	Q.7)B	Q.8)B	Q.9)A	Q.10)A	Q.11)A	Q.12)A	Q.13)A	Q.14)A	Q.15)A
Q.16)A	Q.17)A	Q.18)A	Q.19)A	Q.20)A	Q.21)A	Q.22)A	Q.23)A	Q.24)A	Q.25)A	Q.26)A	Q.27)A	Q.28)A	Q.29)A	
Q.30)A	Q.31)C	Q.32)A	Q.33)D	Q.34)A	Q.35)A	Q.36)A	Q.37)A	Q.38)A	Q.39)A	Q.40)B	Q.41)A	Q.42)A	Q.43)A	
Q.44)A	Q.45)B	Q.46)A	Q.47)A	Q.48)C	Q.49)B	Q.50)A								

# TCET 2026 Test Series:

## Explanations:

### Technical

Q.1) Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.2) Explanation:  
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Q.3) Explanation:  
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Q.50) Explanation:  
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# TCET 2026 Test Series:

## Answers And Explanations:

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Q.1) B  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.2) A  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.3) A  
Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.4) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.5) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.6) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.7) B

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.8) B

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.9) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.10) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.11) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.12) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.13) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.14) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.15) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.16) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.17) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.18) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.19) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.20) A  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.21) A  
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Q.22) A  
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Q.23) A  
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Q.24) A  
Explanation:  
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Q.25) A  
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Q.26) A  
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Q.27) A  
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Q.28) A  
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Q.29) A  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.30) A  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.31) C  
Explanation:  
Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.32) A  
Explanation:  
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Q.33) D  
Explanation:  
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Q.34) A  
Explanation:  
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Q.35) A  
Explanation:  
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Q.36) A  
Explanation:

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Q.37) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.38) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.39) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.40) B

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.41) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.42) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.43) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.44) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.45) B

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.46) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.47) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.48) C

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.49) B

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*

Q.50) A

Explanation:

Multiple Choice Type Question: \*\* Explanation not Available \*\*