

Learning with Sahirullah

CS301 - Data Structures (Quiz No.4)

Question # 1 of 10 (Start time: 01:46:45 PM, 07 January 2025)

Total Marks: 1

A binary tree with N internal nodes has _____ links, _____ links to internal nodes and _____ links to external nodes.

Select the correct option

<input checked="" type="radio"/>	$N-1, 2N, N+1$
<input type="radio"/>	$N+1, 2N, N-1$
<input type="radio"/>	$2N, N-1, N+1$
<input type="radio"/>	$N+1, N-1, 2N$

Question # 2 of 10 (Start time: 01:48:18 PM, 07 January 2025)

Total Marks: 1

If there are 56 internal nodes in a binary tree then how many external nodes this binary tree will have?

Select the correct option

- | | |
|----------------------------------|----|
| <input type="radio"/> | 55 |
| <input type="radio"/> | 54 |
| <input type="radio"/> | 56 |
| <input checked="" type="radio"/> | 57 |

Click to Save Answer & Move to Next Question

Which of the following heap method increase the value of key at position 'p' by the amount 'delta'?

Select the correct option

- | | |
|----------------------------------|------------------------|
| <input type="radio"/> | decreaseKey(p,delta) |
| <input checked="" type="radio"/> | increaseKey(p,delta) |
| <input type="radio"/> | percolateDown(p,delta) |
| <input type="radio"/> | remove(p,delta) |

Click to Save Answer & Move to Next Question

Which of the following heap method lowers the value of key at position 'p' by the amount 'delta'?

Select the correct option

- | | |
|----------------------------------|------------------------|
| <input type="radio"/> | increaseKey(p,delta) |
| <input type="radio"/> | remove(p,delta) |
| <input checked="" type="radio"/> | decreaseKey(p,delta) |
| <input type="radio"/> | percolateDown(p,delta) |

Click to Save Answer & Move to Next Question

Question # 5 of 10 (Start time: 01:50:50 PM, 07 January 2025)

Total Marks: 1

A binary tree with 45 internal nodes has _____links to external nodes.

Select the correct option

<input checked="" type="radio"/>	46
<input type="radio"/>	44
<input type="radio"/>	90
<input type="radio"/>	45

Click to Save Answer & Move to Next Question

If both pointers of the node in a binary tree are NULL then it will be a/an

Select the correct option

- | | |
|----------------------------------|---------------------------|
| <input type="radio"/> | None of the given options |
| <input type="radio"/> | Inner node |
| <input type="radio"/> | Root node |
| <input checked="" type="radio"/> | Leaf node |

Click to Save Answer & Move to Next Question

When a complete binary tree, represented by an array then for any array element at position i , the left child is at position _____.

Select the correct option

- | | |
|----------------------------------|---------------------|
| <input checked="" type="radio"/> | $2i+1$ |
| <input type="radio"/> | $2i$ |
| <input type="radio"/> | $\text{floor}(i/2)$ |
| <input type="radio"/> | $2i-1$ |

Click to Save Answer & Move to Next Question

When a complete binary tree represented by an array then if right child is at position 5 then left child will be at position _____

Select the correct option

- | | |
|----------------------------------|---|
| <input type="radio"/> | 4 |
| <input checked="" type="radio"/> | 6 |
| <input type="radio"/> | 2 |
| <input type="radio"/> | 3 |



Click to Save Answer & Move to Next Question

Question # 9 of 10 (Start time: 01:54:28 PM, 07 January 2025)

Total Marks: 1

If the bottom level of a binary tree is NOT completely filled, depicts that the tree is NOT a -----

Select the correct option

- | | |
|----------------------------------|--------------------------------|
| <input type="radio"/> | Threaded binary tree |
| <input type="radio"/> | Perfectly complete Binary tree |
| <input type="radio"/> | Expression tree |
| <input checked="" type="radio"/> | Complete Binary tree |

Click to Save Answer & Move to Next Question

Question # 10 of 10 (Start time: 01:55:32 PM, 07 January 2025)

Total Marks: 1

Consider a max heap, represented by the following array:
40,30,20,10,15,16,17,8,4

Which of the following is the index of the parent of node 15?

Select the correct option

<input type="radio"/>	3
<input checked="" type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	0

Click to Save Answer & Move to Next Question