Question No : 1 of 26 Marks: 1 (Budgeted Time 1 Min)

Each node in singly link list has,

Answer (Please select your correct option)

- 1 pointer ✓
- 2 pointers
- 3 pointers
- 4 pointers

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Question No : 2 of 26 Marks: 1 (Budgeted Time 1 Min)

Parameters in function call are passed using,

Answer (Please select your correct option)

- Stack ✓
- Queue
- Binary Search Tree
- AVL Tree

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Question No : 3 of 26 Marks: 1 (Budgeted Time 1 Min)

The_____ method of list data structure removes the element residing at the current position.

Answer (Please select your correct option)

- Add
- Next
- Remove ✓
- Find

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Question No : 4 of 26 Marks: 1 (Budgeted Time 1 Min)

Insertion in a linked list can be done at

Answer (Please select your correct option)

- Front only
- Back only
- Somewhere in middle only
- Front, back and somewhere in the middle ✓

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Question No : 5 of 26 Marks: 1 (Budgeted Time 1 Min)

An array is a group of ---------- memory locations.

Answer (Please select your correct option)

- Scattered
- Isolated
- Random(non-consecutive)
- Consecutive

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Question No : 6 of 26 Marks: 1 (Budgeted Time 1 Min)

Which of the following applications may use a stack?

Answer (Please select your correct option)

- Accessing shared resource
- Parentheses balancing program ✓
- Buffering messages
- Waiting list

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Question No : 7 of 26 Marks: 1 (Budgeted Time 1 Min)

Every AVL is _____

Answer (Please select your correct option)

- Ternary Tree
- Complete Binary Tree
- Heap
- Binary Search Tree

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Question No : 8 of 26 Marks: 1 (Budgeted Time 1 Min)

Consider the following infix expression:
x – y * a + b / c
Which of the following is a correct equivalent expression for the above?

Answer (Please select your correct option)

- x y -a * b +c /
- x *y a - b c / +
- d x y a * - b c / + ✓
- x y a * - b/ + c

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Question No : 9 of 26 Marks: 1 (Budgeted Time 1 Min)

Non-recursive calls are faster than which of the following calls?

Answer (Please select your correct option)

- Parameterized
- Recursive ✓
- Function
- Non-Function

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Question No : 10 of 26 Marks: 1 (Budgeted Time 1 Min)

The balance of a node is the result of "height of left subtree" ..... "height of right subtree".

Answer (Please select your correct option)

- Plus
- Minus ✓
- Multiply
- Divided by

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Question No : 11 of 26 Marks: 1 (Budgeted Time 1 Min)

Searching an element in an AVL tree takes maximum _____ time (where n is number of nodes in AVL tree)

Answer (Please select your correct option)

- $Log_2(n+1)$
- $Log_2(n+1) - 1$
- 1.44 Log_2n ✓
- 1.66 Log_2n

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Question No : 12 of 26 Marks: 1 (Budgeted Time 1 Min)

A complete binary tree having "N" nodes consists of ..... Levels.

Answer (Please select your correct option)

- Log2 (N+1) - 1 ✓
- Log2 (N-1) - 1
- Log2 (N+1) + 1
- Log2 (N-1) + 1

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Question No : 13 of 26 Marks: 1 (Budgeted Time 1 Min)

In the post-order traversal of a binary search tree, nodes process as:

Answer (Please select your correct option)

- Left-subtree , Right-subtree , Root ✓
- Right-subtree , Root , Left-subtree
- Left-subtree , Root , Right-subtree
- Right-subtree , Left-subtree , Root

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Question No : 14 of 26 Marks: 1 (Budgeted Time 1 Min)

The simplest case in a BST to delete a node is:

Answer (Please select your correct option)

- When the node, that is to be deleted is root node
- When the node, that is to be deleted has both left and right child
- When the node, that is to be deleted has only one child
- 4 When the node, that is to be deleted is a leaf node ✓

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Question No : 15 of 26 Marks: 1 (Budgeted Time 1 Min)

If class A defines class B as its friend, then:

Answer (Please select your correct option)

- Class A can access private members of class B
- Class B can access only the public members of class A
- Class A can access only the public members of class B
- Class B can access private members of class A ✓

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Question No : 16 of 26 Marks: 1 (Budgeted Time 1 Min)

In the statement **int& a= b;**

Answer (Please select your correct option)

- a and b pointing to two different memory location
- a and b are two different names of the same memory location
- a and b are two different variable names
- b hold the address of variable a

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Question No : 17 of 26 Marks: 1 (Budgeted Time 1 Min)

The main use of AVL tree is:

Answer (Please select your correct option)

- Searching of data
- Storing of data ✓
- Insertion of data
- Security of data

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Question No : 18 of 26 Marks: 1 (Budgeted Time 1 Min)

In simple implementation of stack, isFull() method is used due to .....

Answer (Please select your correct option)

- (•) Limitation of array ✓
- ( ) Strength of array
- ( ) Linked list connectivity
- ( ) Complexity of linked list

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Question No : 19 of 26 Marks: 1 (Budgeted Time 1 Min)

Write in postfix form: 5 * (9 – 7)

Answer (Please select your correct option)

- 5 (9 7 -) *
- 5 9 * 7 -
- 5 9 7 - * ✓
- 5 (9 7 -)

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Question No : 20 of 26 Marks: 1 (Budgeted Time 1 Min)

What will be result of following postfix expression ?

1 2 3 *+ **2** -

Answer (Please select your correct option)

- 3
- 4 ✓ (3 + (2 * 9)) - 6 becomes 3 2 9 * + 6 -
- 5
- 10

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Question No : 21 of 26 Marks: 2 (Budgeted Time 4 Min)

How can we calculate the height of tree ?

Answer (Please click here to Add Answer)

100% Normal Arial 12 B I U

It is the longest path from the node to a leaf. So height is the number of edges of the path

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Question No : 22 of 26 Marks: 2 (Budgeted Time 4 Min)

What is meant by traversing of binary tree?

traverse

/ˈtravəs,trəˈvəːs/

verb
gerund or present participle: **traversing**

1. travel across or through.
   "he traversed the forest"
   synonyms: travel over/across, cross, journey over/across, go across, negotiate; More
2. move back and forth or sideways.
   "a probe is traversed along the tunnel"

00%

"A binary tree is a finite set of elements that is either empty or is partitioned into three disjoint subsets. The first subset contains a single element called the root of the tree.

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Question No : 23 of 26 Marks: 3 (Budgeted Time 6 Min)

Consider the following code snippet,

```
class BST_node
{
  private:
   char ch;
```

Answer (Please click here to Add Answer)

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Question No : 23 of 26 Marks: 3 (Budgeted Time 6 Min)

```
    char ch;
    BST_node *BST_letf;
    BST_node *BST_right;
   };
BST_node  *bst, bt;
```

Answer (Please click here to Add Answer)

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Question No : 23 of 26 Marks: 3 (Budgeted Time 6 Min)

Correct the following statements,

bst.BST_left = NULL;
bst.BST_rifht = NULL;
bt->ch = 'A';

Answer (Please click here to Add Answer)

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Question No : 24 of 26 Marks: 3 (Budgeted Time 6 Min)

Explain the logic of the following function.

```
int&  Fun(int&  y)
   {
     y = y +100;
 return y;
```

Answer (Please click here to Add Answer)

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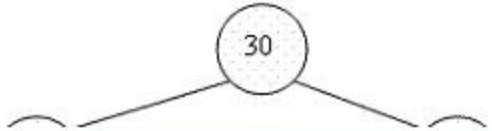
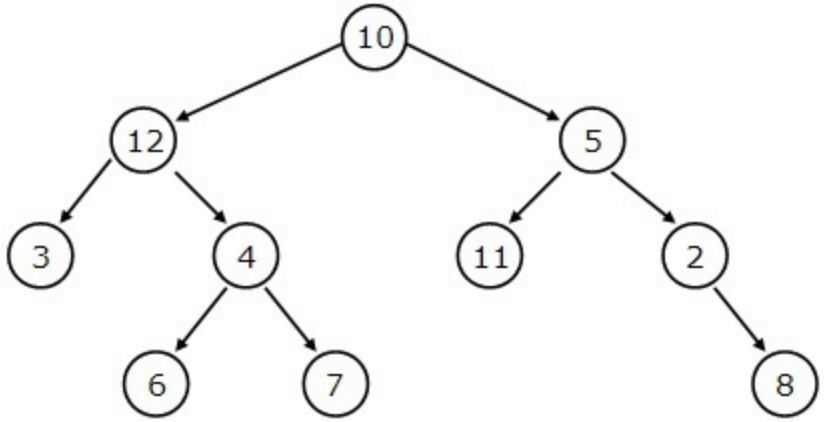
Question No : 25 of 26 Marks: 5 (Budgeted Time 10 Min)

Perform the Preorder and Inorder traversal on the tree given below and show the result in both cases (you have to perform the traversal manually not using any programming language)



Answer (Please click here to Add Answer)



Levelorder tree traversal
10, 12, 5, 3, 4, 11, 2, 6, 7, 8

Inorder tree traversal
3, 12, 6, 4, 7, 10, 11, 5, 2, 8

Preorder tree traversal
10, 12, 3, 4, 6, 7, 5, 11, 2, 8

Postorder tree traversal
3, 6, 7, 4, 12, 11, 8, 2, 5, 10

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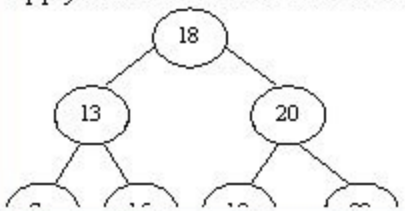
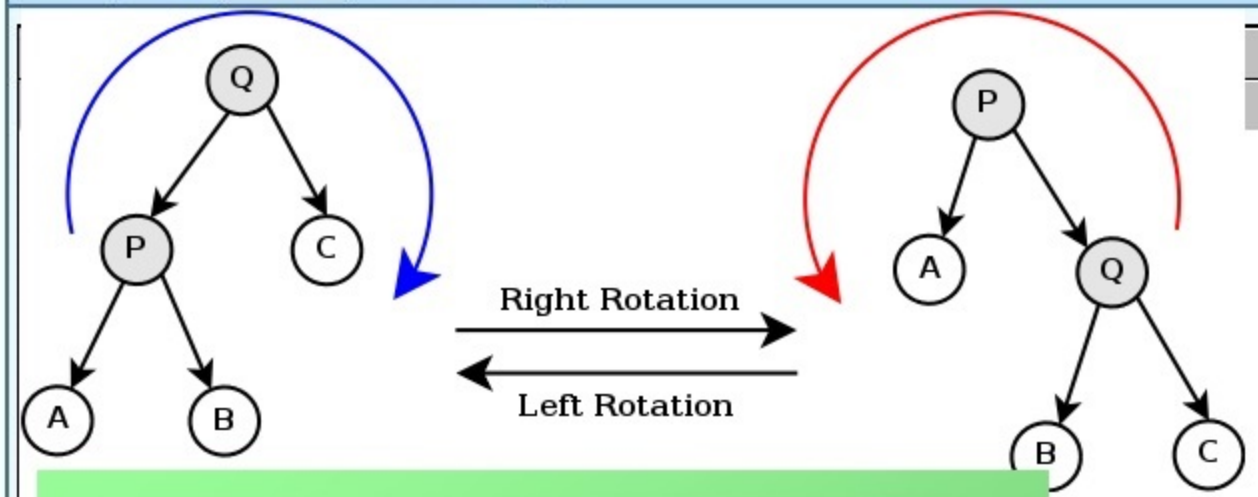
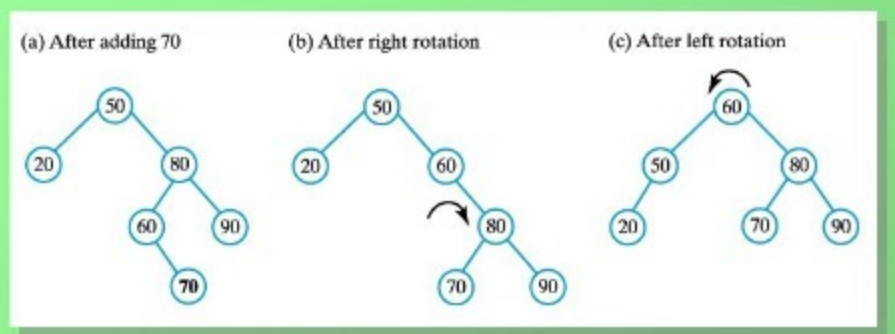
Question No : 26 of 26 Marks: 5 (Budgeted Time 10 Min)

Apply double rotation on the following tree to restore its balance. Show the necessary steps to perform this rotation.



Answer (Please click here to Add Answer)





(a) Adding 70 to the previous tree destroys its balance; to restore the balance, perform both (b) a right rotation and (c) a left rotation.

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