Types of Rotation in Avl Tree MCQ Quiz - Objective Question with Answer for Types of Rotation in Avl Tree - Download Free PDF

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Latest Types of Rotation in Avl Tree MCQ Objective Questions

Types of Rotation in Avl Tree Question 1:

How many rotations are required during the construction of an AVL tree if the following elements are to be added in the given sequence?

35, 50, 40, 25, 30, 60, 78, 20, 28

1. 2 left rotations, 2 right rotations
2. 2 left rotations, 3 right rotations
3. 3 left rotations, 2 right rotations
4. 3 left rotations, 1 right rotation

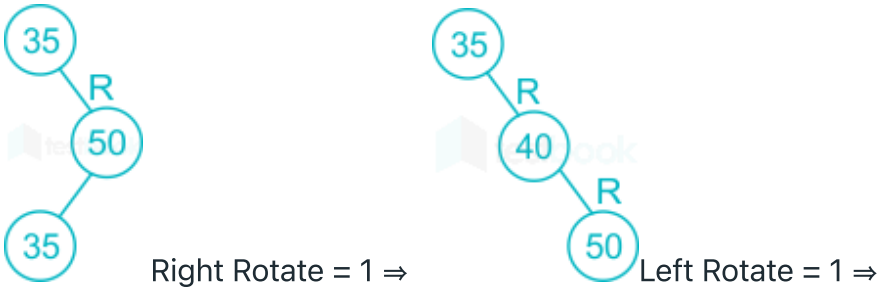
Answer (Detailed Solution Below)

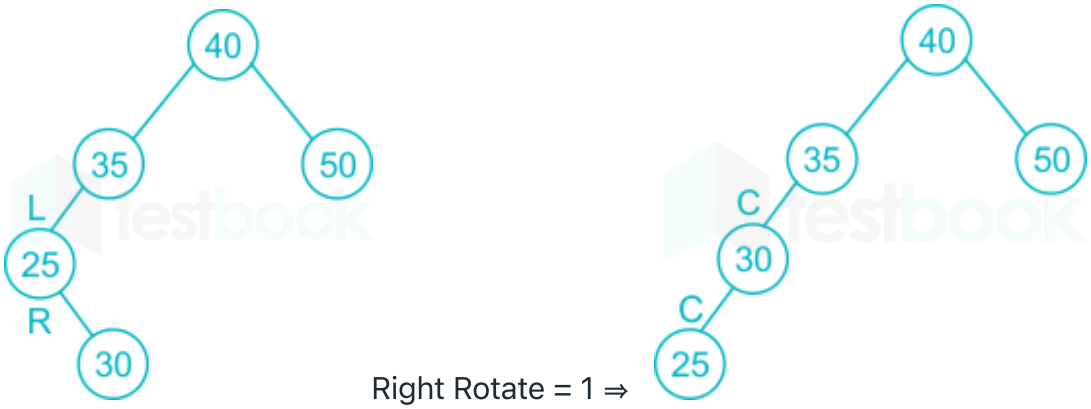
Option 3 : 3 left rotations, 2 right rotations

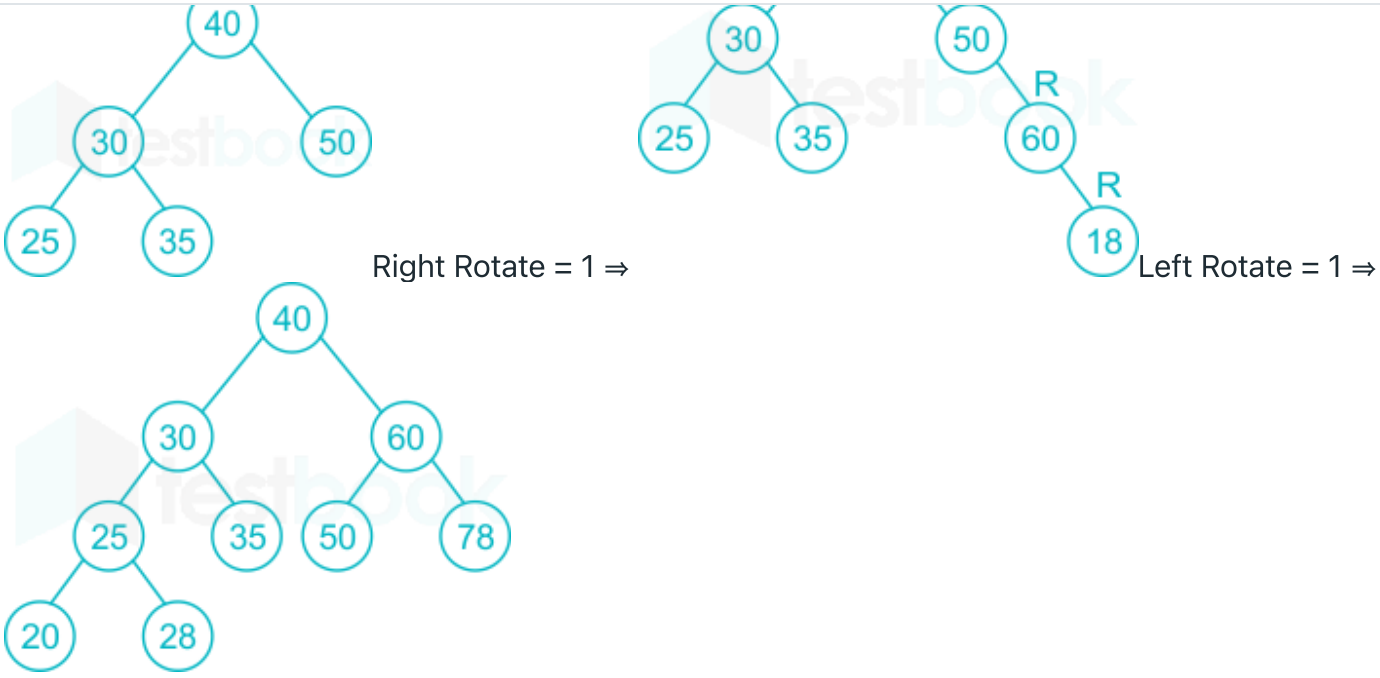
Types of Rotation in Avl Tree Question 1 Detailed Solution

The correct answer is Option 3

Explanation:







Types of Rotation in Avl Tree Question 2:

How many rotation are required during the following operation on the AVL tree, which can be constructed from the post order traversal given as

7 28 37 27 52 68 60 56 40

Operation:

i) add 70, 32, 15

ii) delete 27, 52

2. 2 left rotation, 2 right rotations

3. 3 left rotation, 2 right rotations

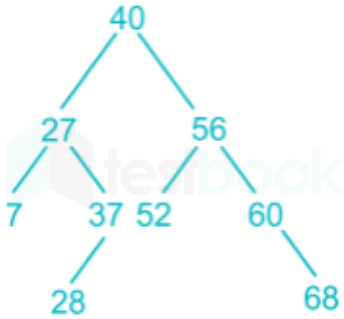
4. 3 left rotation, 1 right rotation

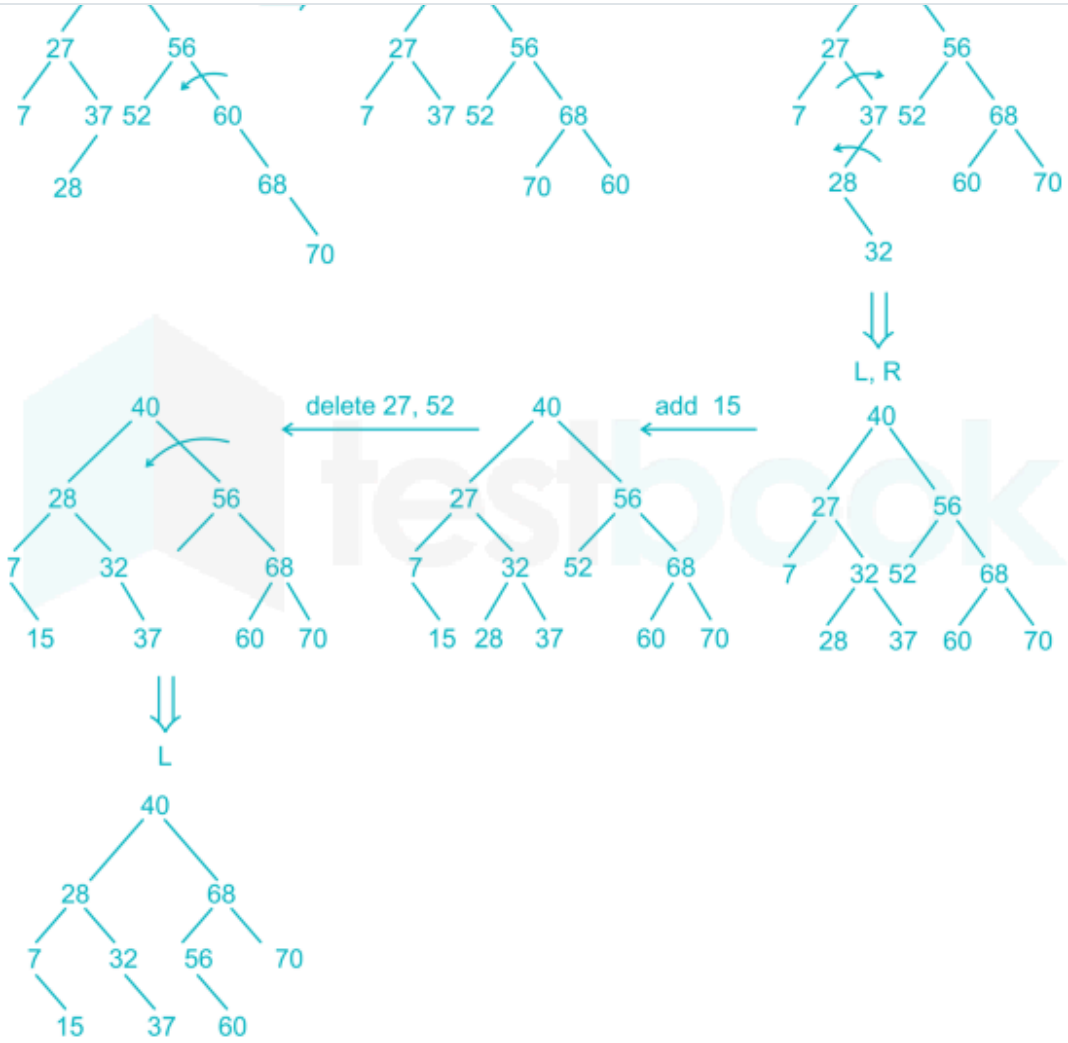
Answer (Detailed Solution Below)

Option 4 : 3 left rotation, 1 right rotation

Types of Rotation in Avl Tree Question 2 Detailed Solution

The original tree is,





Types of Rotation in Avl Tree Question 3:

If an in order traversal of a tree is EACKFHDBG, then its preorder traversal can be

2. F A E K C D H G B

3. E A F K H D C B G

4. F E A K D C H B G

Answer (Detailed Solution Below)

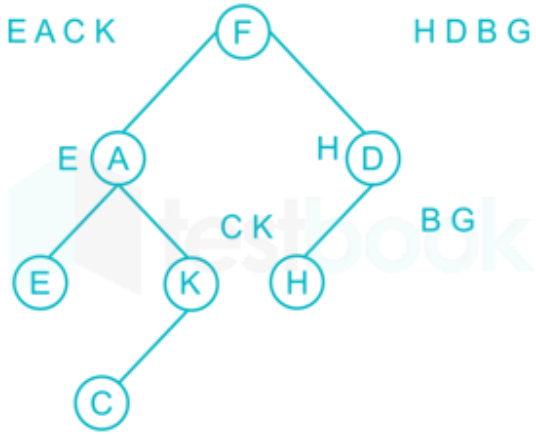
Option 2 : F A E K C D H G B

Types of Rotation in Avl Tree Question 3 Detailed Solution

In order traversal : E A C K F H D B G

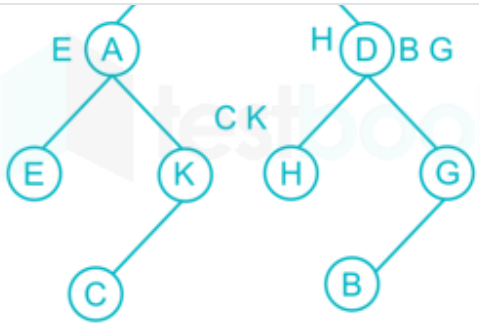
with the given in order traversal, it is not possible to compute a unique preorder traversals. But we can invalidate some of the preorder traversals that is possible from the given in order traversal

a) F A E K C D B H G



In this case, according to in order, H should come before 'B' and at left of 'D'. But according to preorder 'B' will come Left of 'D'. Hence in order and preorder contradicts for constructing the tree properly so this option is invalid

b) F A E K C D H G B



This preorder and in order traversal construct the tree properly

c) E A F K H D C B G

Here 'c' comes after 'HD'. So this option is invalid

d) F E A K D C H B G

Here 'D' (right child) comes before 'c' (left child)

so this is also invalid

Top Types of Rotation in Avl Tree MCQ Objective Questions

Types of Rotation in Avl Tree Question 4

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35, 50, 40, 25, 30, 60, 78, 20, 28

1. 2 left rotations, 2 right rotations
2. 2 left rotations, 3 right rotations
3. 3 left rotations, 2 right rotations
4. 3 left rotations, 1 right rotation

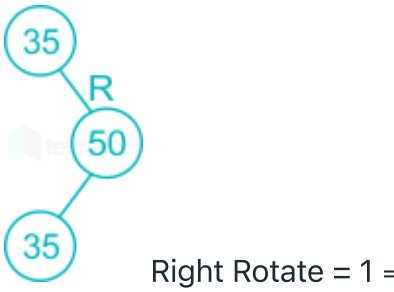
Answer (Detailed Solution Below)

Option 3 : 3 left rotations, 2 right rotations

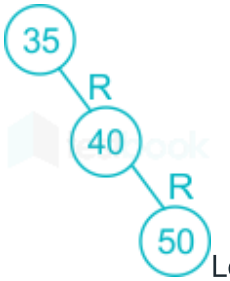
Types of Rotation in Avl Tree Question 4 Detailed Solution

The correct answer is Option 3

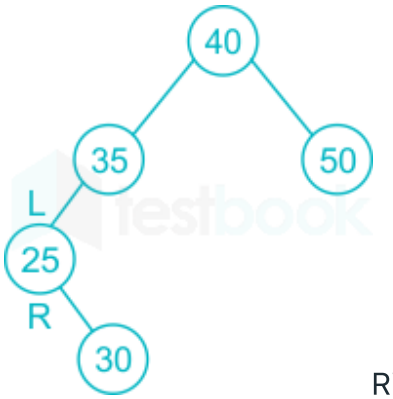
Explanation:



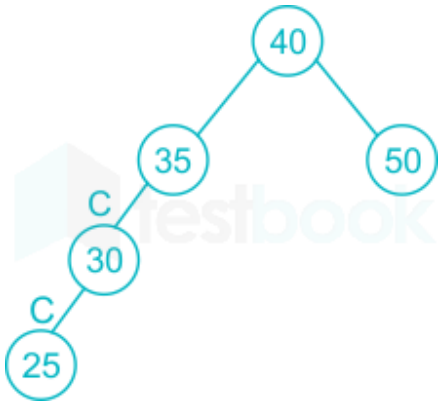
Right Rotate = 1 ⇒

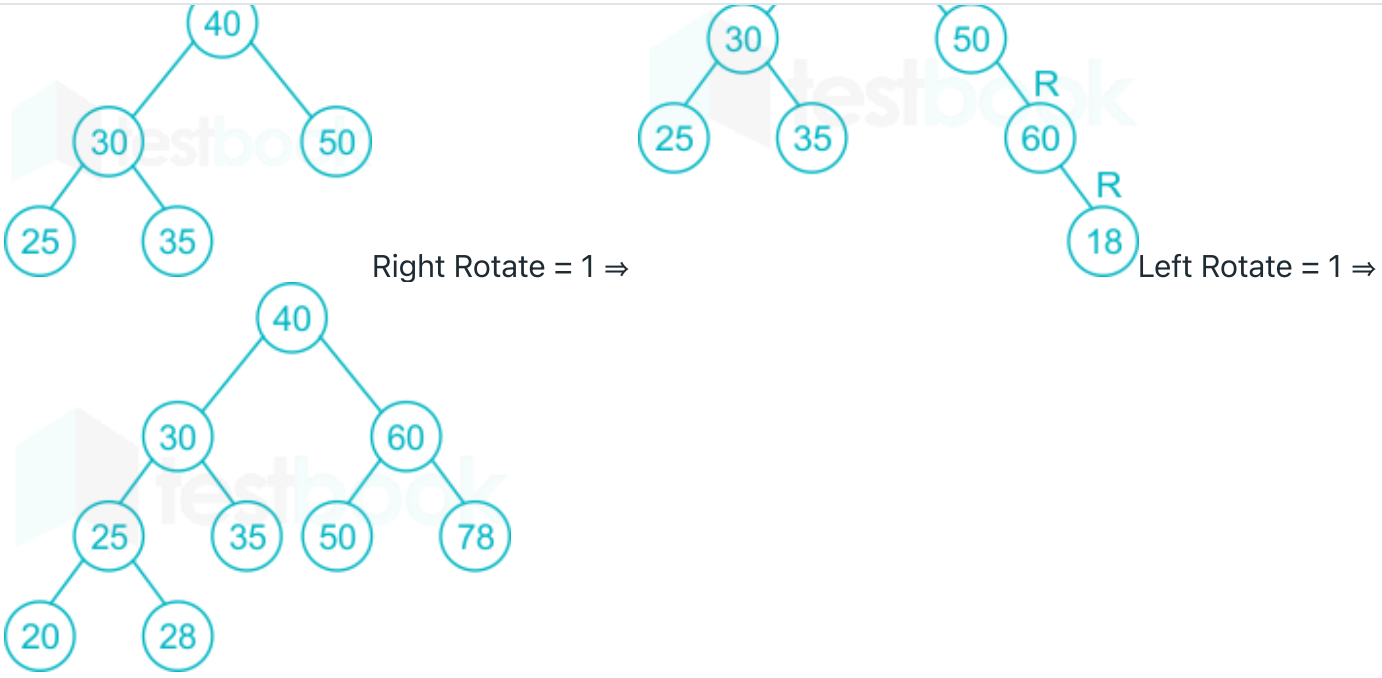


Left Rotate = 1 ⇒



Right Rotate = 1 ⇒





Types of Rotation in Avl Tree Question 5:

If an in order traversal of a tree is EACKFHDBG, then its preorder traversal can be

1. F A E K C D B H G
2. F A E K C D H G B
3. E A F K H D C B G

Answer (Detailed Solution Below)

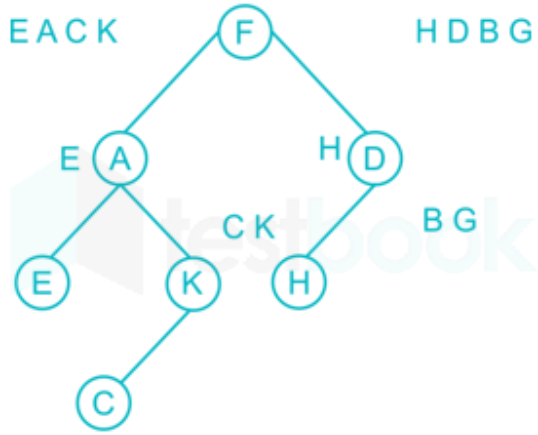
Option 2 : F A E K C D H G B

Types of Rotation in Avl Tree Question 5 Detailed Solution

In order traversal : E A C K F H D B G

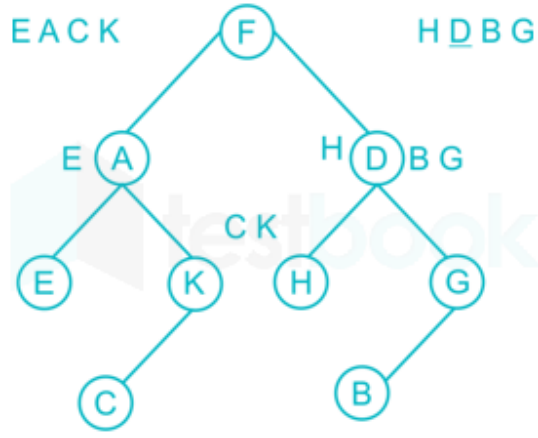
with the given in order traversal, it is not possible to compute a unique preorder traversals. But we can invalidate some of the preorder traversals that is possible from the given in order traversal

a) F A E K C D B H G



In this case, according to in order, H should come before 'B' and at left of 'D'. But according to preorder 'B' will come Left of 'D'. Hence in order and preorder contradicts for constructing the tree properly so this option is invalid

b) F A E K C D H G B



This preorder and in order traversal construct the tree properly

Here 'c' comes after 'HD'. So this option is invalid

d) F E A K D C H B G

Here 'D' (right child) comes before 'c' (left child)

so this is also invalid

Types of Rotation in Avl Tree Question 6:

How many rotation are required during the following operation on the AVL tree, which can be constructed from the post order traversal given as

7 28 37 27 52 68 60 56 40

Operation:

i) add 70, 32, 15

ii) delete 27, 52

1. 2 left rotation, 1 right rotation

2. 2 left rotation, 2 right rotations

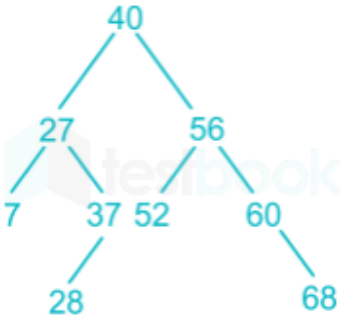
4. 3 left rotation, 1 right rotation

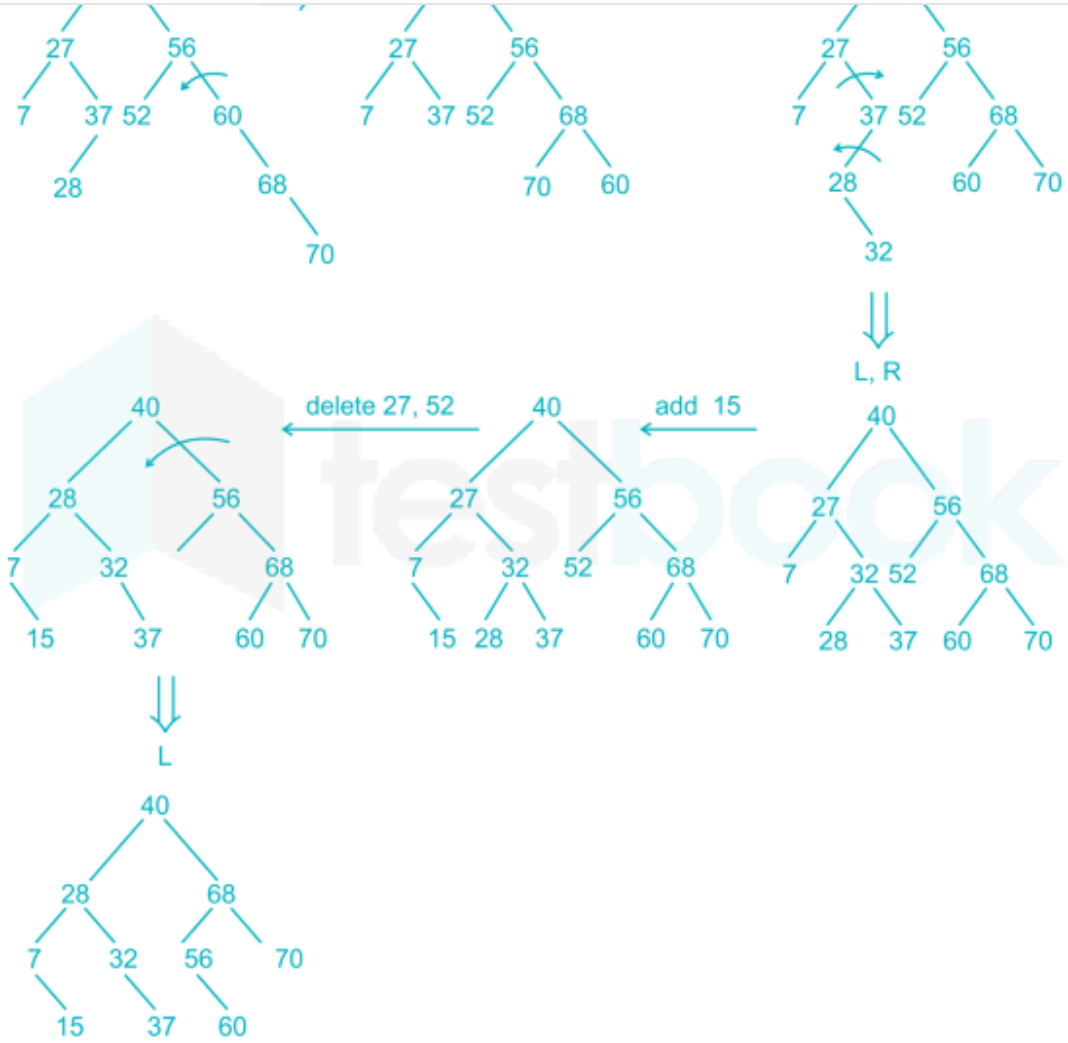
Answer (Detailed Solution Below)

Option 4 : 3 left rotation, 1 right rotation

Types of Rotation in Avl Tree Question 6 Detailed Solution

The original tree is,





Types of Rotation in Avl Tree Question 7:

How many rotations are required during the construction of an AVL tree if the following elements are to be added in the given sequence?

2. 2 left rotations, 3 right rotations
3. 3 left rotations, 2 right rotations
4. 3 left rotations, 1 right rotation

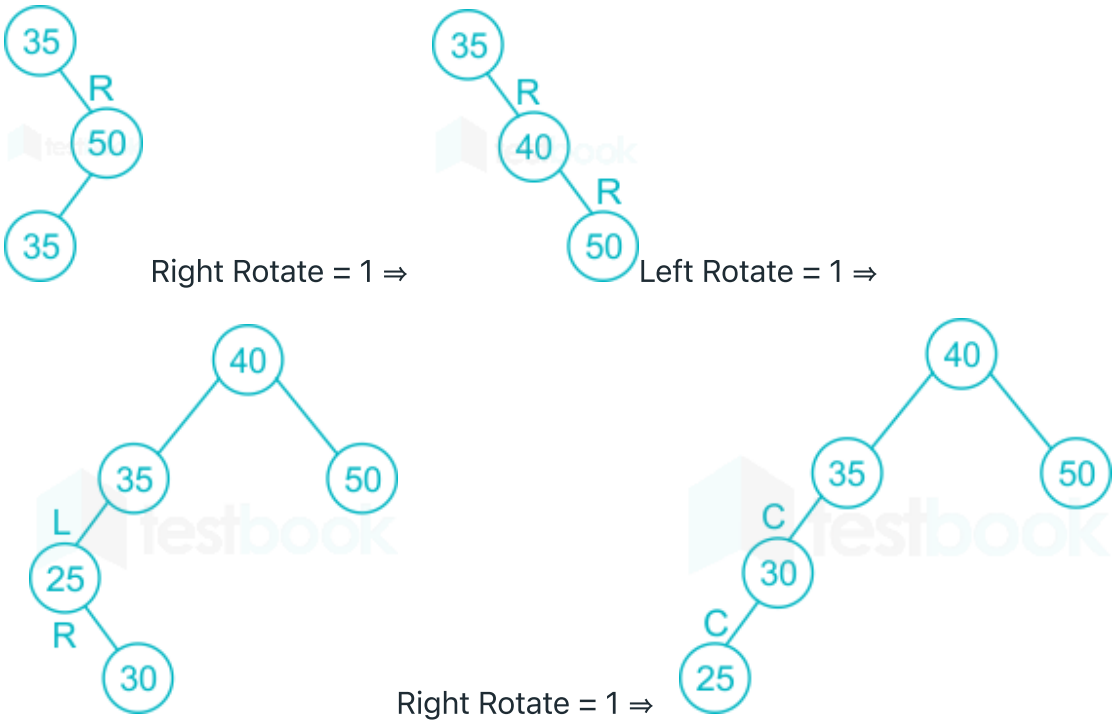
Answer (Detailed Solution Below)

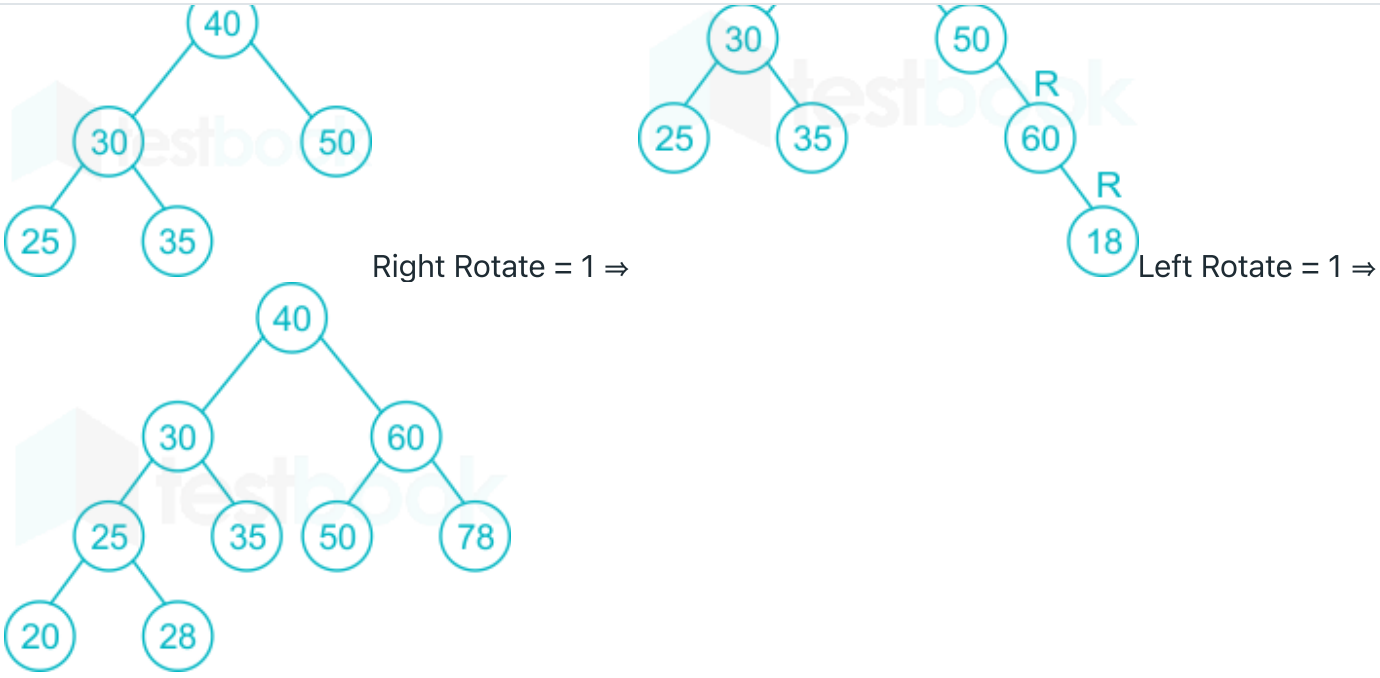
Option 3 : 3 left rotations, 2 right rotations

Types of Rotation in Avl Tree Question 7 Detailed Solution

The correct answer is Option 3

Explanation:





Types of Rotation in Avl Tree Question 8:

What order should we insert the elements {1,2,...,7} into an empty AVL tree so that we don't have to perform any rotations on it?

1. {4,2,1,6,3,5,7}
2. {4,2,6,1,3,5,7}
3. {4,2,1,6,3,7,5}

Answer (Detailed Solution Below)

Option 2 : {4,2,6,1,3,5,7}

Types of Rotation in Avl Tree Question 8 Detailed Solution

We should insert in the order {4,2,6,1,3,5,7} to make an AVL tree.The ordering of {2,6} and the ordering of {1,3,5,7} do not matter. We can see the resulting binary search tree is perfectly balance therefore an AVL tree.