Roll No. 22L-7002 Section 3A

National University of Computer and Emerging Sciences, Lahore Campus

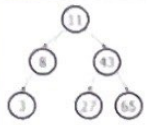
Course:	Data Structures	Course Code:	CS 2001
Program:	BS(CS)	Semester:	Fall 2024
Duration:	15 Minutes	Total Marks:	10
Paper Date:	28 Oct 2024	Exam	Quiz 2
Section:	A		

Instruction/Notes: Solve the exam on this question paper.

Question: Given the root of the AVL tree, write a recursive function in C++ in the AVL tree class that counts the number of nodes in AVL within a given range (low, high). Also, give time and space complexity of your code.

The function prototype is int rangeCountAVL(AVLnode * root, int low, int high),

2

	For the AVL tree on the left, the values between the range (8 – 40) are 3 For the AVL tree on the left, the values between the range (10 – 70) are 4

outside

```
AVL node* temp = root
int count=0;
if (temp -> left > low || temp -> left < high)
    count++;
    temp = temp->left;
if (temp -> right > low || temp -> right < high)
    count++;
    temp = temp->right;
return (temp , low , high)
```

No R.C

T.C = ?

SC

time complexity = Logn