Data Structures and Algorithms- Quiz 4

Question 1

1 / 1 pts

Select the correct statement regarding binary tree

- Every binary tree is either a complete binary tree or full binary tree
- Every complete binary tree is also a full binary tree.

Correct!

- None of these
- Every complete binary tree is also a full binary tree.

Question 2

1 / 1 pts

Postorder traversal of a given binary search tree, T produces the following sequence of keys
10, 9, 23, 22, 27, 25, 15, 50, 95, 60, 40, 29
Which one of the following sequences of keys can be the result of an in-order traversal of the tree T?

- 29, 15, 9, 10, 25, 22, 23, 27, 40, 60, 50, 95
- 95, 50, 60, 40, 27, 23, 22, 25, 10, 9, 15, 29

Correct!

- 9, 10, 15, 22, 23, 25, 27, 29, 40, 50, 60, 95
- 9, 10, 15, 22, 40, 60, 50, 95, 23, 25, 27, 29

Question 3

1 / 1 pts

The height of a binary tree is the maximum number of edges in any root to leaf path. The maximum number of nodes in a binary tree of height h is:

Correct!

- 2^(h+1) -1
- 2^h +1
- 2*(h+1)
- 2^h -1

Question 4

1 / 1 pts

Which of the following traversal outputs the data in sorted order in a BST?

Correct!

- Inorder
- Preorder
- Postorder
- Level order

Question 5

1 / 1 pts

If we are inserting the numbers 7, 5, 1, 8, 3, 6, 0, 9, 4, 2 in that order into an initially empty binary search tree. What is the in-order traversal sequence of the resultant tree?

Correct!

- 0123456789
- 9864230157
- 7510324689
- 0243165987

Question 6

1 / 1 pts

The following numbers are inserted into an empty binary search tree in the given order: 10, 1, 3, 5, 15, 12, 16. What is the height of the binary search tree (the height is the maximum distance of a leaf node from the root)?

Correct!

- 3
- 5
- 4
- 2

Question 7

1 / 1 pts

The preorder traversal of a binary search tree is 30, 20, 10, 15, 25, 23, 39, 35, 42. What is the postorder traversal sequence of the same tree?

- 15, 20, 10, 23, 25, 42, 35, 39, 30
- 10, 20, 15, 23, 25, 35, 42, 39, 30
- 15, 10, 25, 23, 20, 42, 35, 39, 30

Correct!

- 15, 10, 23, 25, 20, 35, 42, 39, 30

Question 8

1 / 1 pts

Consider a node P in a Binary Tree. Given that P has two children, let Q be Inorder successor of P. Which of the following is true about Q?

- None of these

Correct!

- Q has no left child
- Q has both children
- Q has no right child

Question 9

1 / 1 pts

What are the conditions for an optimal binary search tree and what is its advantage?

- You should know the frequency of access of the keys, improves the lookup time
- The tree can be modified and you should know the number of elements in the tree before hand, it improves the deletion time
- The tree should be just modified and improves the lookup time

Correct!

- The tree should not be modified and you should know how often the keys are accessed, it improves the lookup cost

Question 10

1 / 1 pts

What is the speciality about an inorder traversal of a binary search tree?

- It traverses in a random fashion
- It traverses based on priority of the node
- Correct! It traverses in an increasing order
- It traverses in a non increasing order