

POLL TEST

Q.1 Why to prefer red-black trees over AVL trees?

- (A) Because red-black is more rigidly balanced
- (B) AVL tree store balance factor in every node which costs space
- (C) AVL tree fails at scale
- (D) Red black is more efficient

RIGHT ANSWER: (B)

Q.2 Items 7, 3, 11, 9, and 13 are inserted into an AVL tree. What happens when 12 is inserted?

- (a) no rotation is needed
- (b) a single rotation between some node and its left child is performed
- (c) a single rotation between some node and its right child is performed
- (d) a double rotation with a node, its left child, and a third node is performed
- (e) a double rotation with a node, its right child, and a third node is performed

Right Answer: (C)

Q.3 Which of the following statements is true about deleting the root of a binary search tree?

- (a) the root pointer always changes
- (b) the root pointer changes if it does not have two children
- (c) if the root has two children, its item is replaced by the largest element in the right subtree
- (d) all of the above
- (e) none of (a), (b), and (c)

RIGHT ANSWER: (B)

Q.4 What is the maximum height of an AVL tree with p nodes?

- (A) p
- (B) $\log(p)$
- (C) $\log(p)/2$
- (D) p^2

RIGHT ANSWER: (B)

Q.5 To implement Dijkstra's shortest path algorithm on unweighted graphs so that it runs in linear time, the data structure to be used is:

- (A) Stack
- (B) Heap
- (C) Queue
- (D) Binary Tree

RIGHT ANSWER: (C)