

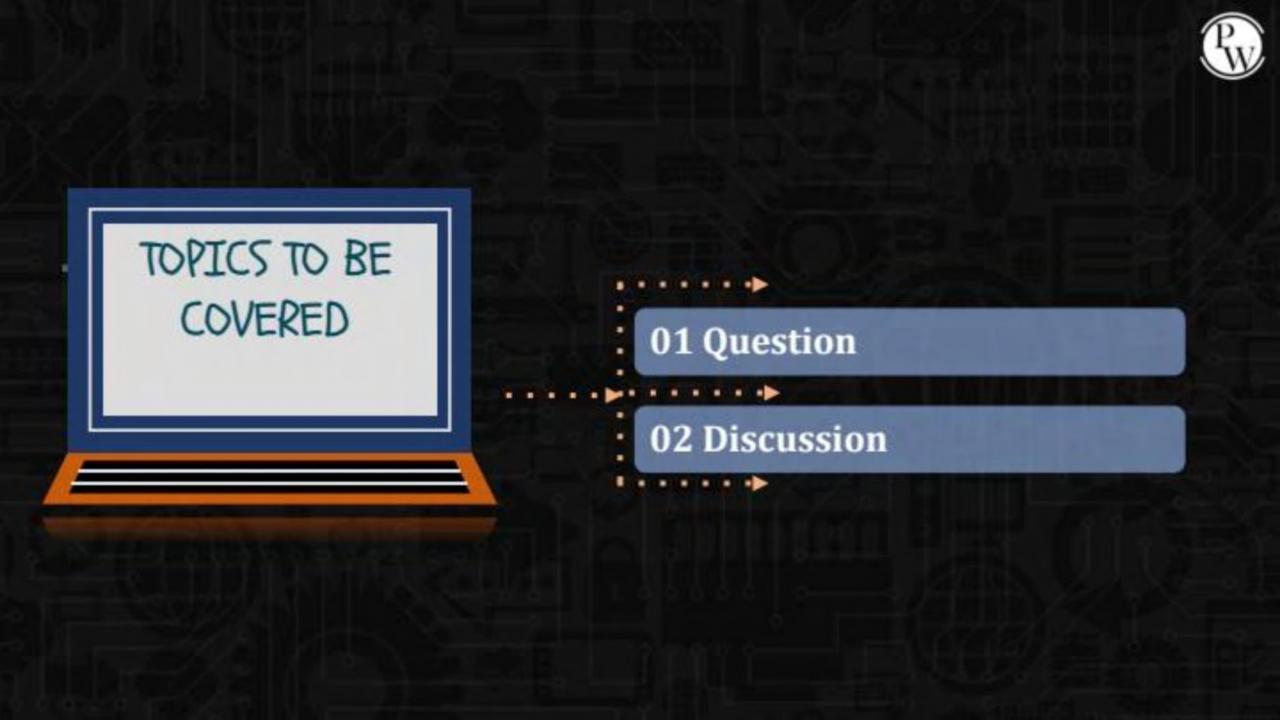


Trees-5

DPP-05 Discussion Notes



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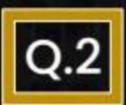
The minimum number of nodes in AVL tree of height 6 is 20 (Assume that the height of the root node is 1)



[NAT]

$$y(5) = 5$$

$$n(h) = 1 + n(h-1) + n(h-2)$$



Consider the following statements:



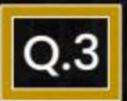
P: An AVL tree is a height-balanced complete binary tree.

Q: A heap is necessarily a complete binary tree.
Which of the following statement(s) is/are CORRECT?

[MCQ]

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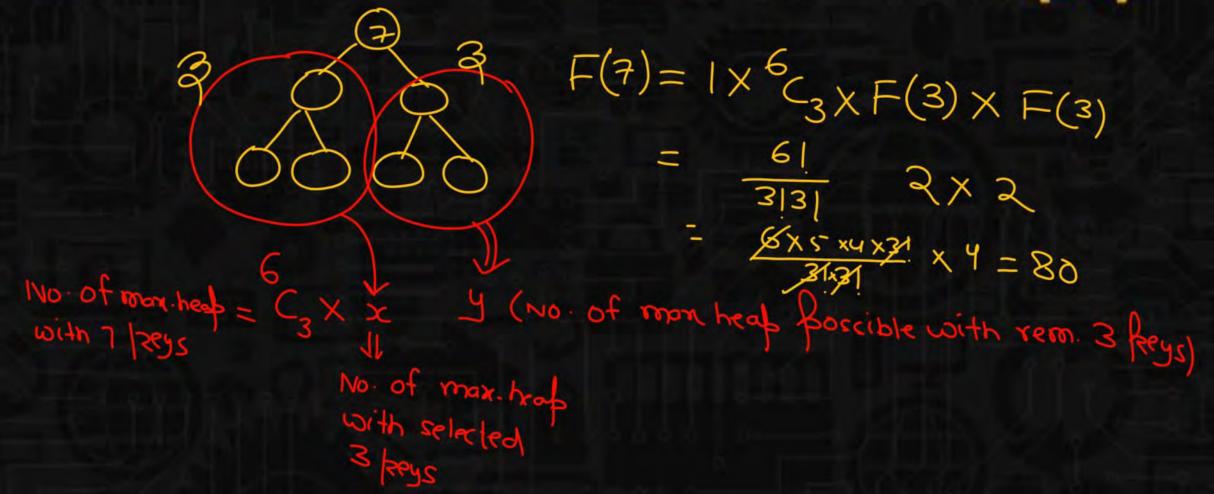
- A. P only
- B. Q only
- c. Both P and Q
- D. Neither P nor Q



The total number of ways in which a max-heap can be constructed with the keys-7, 6, 1, 4, 5, 2, 3 is 80.



[NAT]

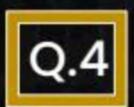


$$F(n) = 1 \times {}^{n-1}C_k \times F(k) \times F(n-1-k)$$

$$F(1) = 1$$

$$F(2) = 1$$

$$F(3) = 2$$



Consider the following statements:



P: If the root node of a BST is deleted, it can be replaced by inorder predecessor.

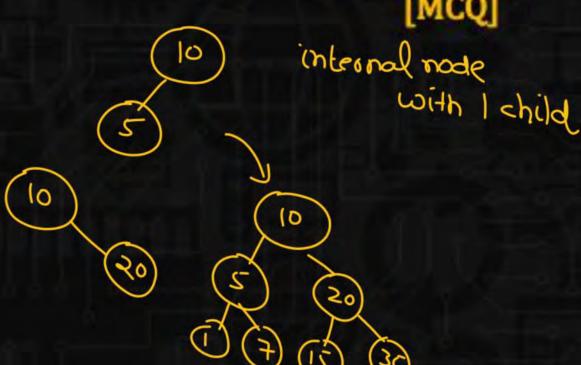
Q: If the root node of a BST is deleted, it can be replaced by preorder successor.

Which of the following is/are CORRECT

Root + leaf



- B. Q only
- c. Both P and Q
- D. Neither P nor Q





Consider the following operations in a BST-INSERT(23), INSERT(17), INSERT(25), INSERT(4), INSERT(21), INSERT(1), INSERT(7), DELETE(17), DELETE(23). The post-order traversal of the resultant BST is-





1, 7, 4, 21, 25



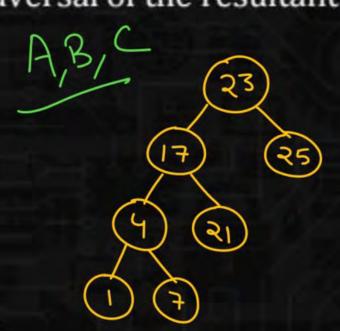
1, 4, 7, 25, 21

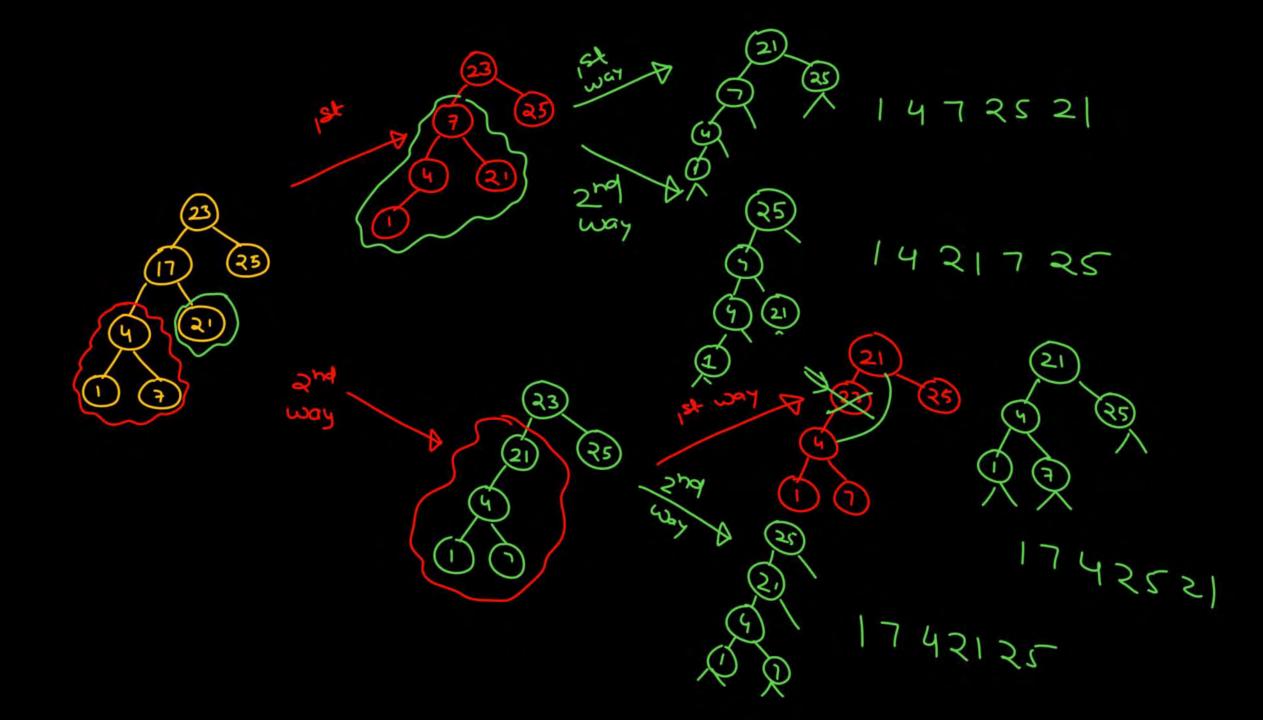


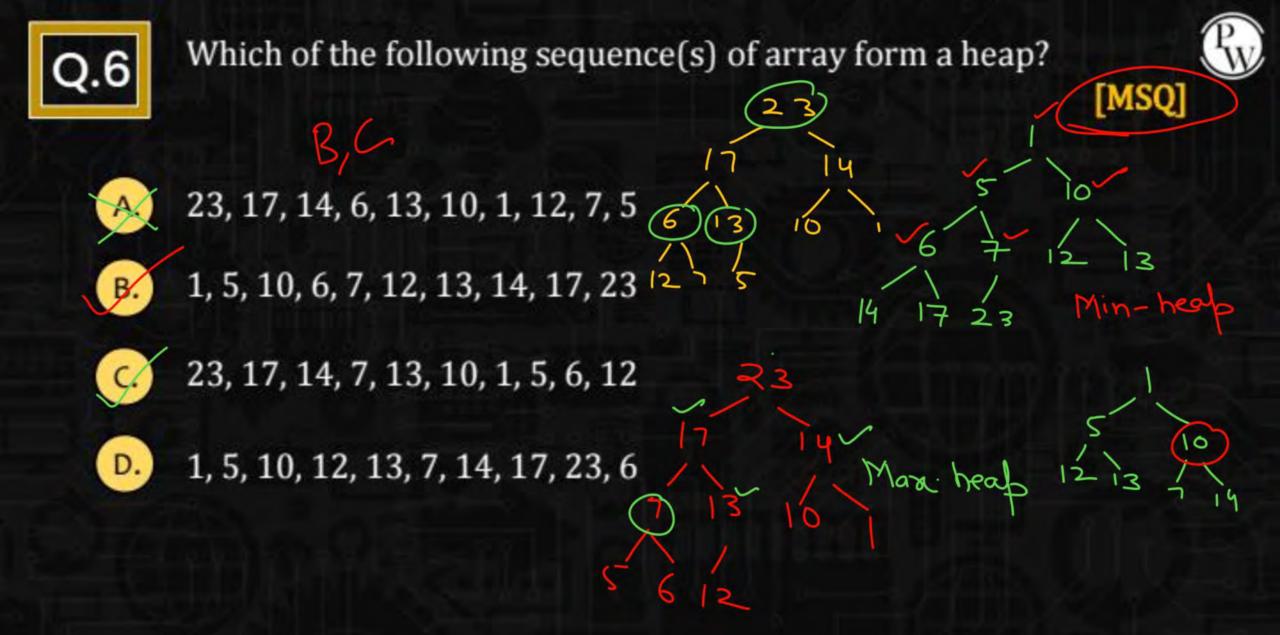
1, 4, 21, 7, 25

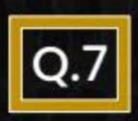


None of the above









Consider the following statements:





P: The accepted balanced factor in an AVL tree are -1, 0 and +1.

Q: The height of an AVL tree with n nodes is given as $\log_2 n$. The number of INCORRECT statements is _____.

[NAT]

Q.8

Construct an AVL tree with the following keys: 12, 10, 15, 14, 13, 17, 8



The immediate left child key value of the root node of the AVL tree is _____.





