GATE CRASH COURSE 2025 DS AI
Data Structure & Algorithms
BST and Binary Heap

Q1 The Post Order traversal sequence for the BST with Pre order sequence as 20,10,5,15,12,17,16,19,32,27,37,34,40 is _____

(A) 5, 12, 16, 19, 17, 15, 10, 27, 34, 40, 37, 32, 20

(B) 5, 12, 16, 19, 17, 15, 10, 34, 27, 40, 37, 32, 20

(C) 5, 12, 16, 19, 17, 15, 10, 27, 34, 37, 40, 32, 20

(D) 5, 12, 16, 19, 17, 15, 10, 27, 37, 40, 34, 32, 20

Q2 If The Elements 45, 32, 70, 62, 53, 12 and 16 are inserted into a BST in the same sequence, Then The resultant BST is given as _____

(A) 45, 32, 70, 16, 62, 12, 53

(B) 45, 32, 70, 62, 12, 16, 53

(C) 45, 32, 70, 12, 16, 62, 53

(D) 45, 32, 70, 12, 62, 16, 53

Q3 Consider a min heap with elements 8, 15, 23, 17, 20, 30, 40, 25, 27, 32. After 3 Delete Operations, The elements of tree would be ___

(A) 20, 25, 23, 32, 27, 30, 40

(B) 20, 23, 25, 32, 27, 30, 40

(C) 20, 25, 23, 27, 32, 30, 40

(D) 20, 25, 23, 32, 27, 40, 30

Q4 The Max heap after construction with elements 20, 40, 15, 60, 70, 50, 45, 28 inserted in that order is _____

(A) 70, 60, 50, 40, 28, 15, 45, 20

(B) 70, 60, 50, 28, 40, 45, 15, 20

(C) 70, 60, 50, 28, 40, 15, 45, 20

(D) 70, 60, 50, 40, 28, 45, 15, 20

Q5 If The Elements 80,40,70,60,90,50,30,20,100 and 10 are inserted into an empty BST in the same sequence, Then The Pre Order Sequence of resultant BST is given as _____

(A) 80, 40, 30, 20, 10, 70, 50, 60, 90, 100

(B) 80, 40, 30, 20, 10, 60, 50, 70, 90, 100

(C) 80, 40, 30, 20, 10, 50, 60, 70, 90, 100

(D) 80, 40, 30, 20, 10, 70, 60, 50, 90, 100

Q6 The Critical Node(s) in the given BST with elements 12, 8, 18, 5, 11, 17, 4, 2 is / are ___

(A) 12 (B) 5

(C) 11 (D) 8

Q7 _____ Number Of Rotations required to insert a sequence of elements 9, 6, 5, 8, 7, 10 into an empty AVL Tree.

Q8 While Construction of an AVL Tree with elements inserted in the order, 45, 21, 30, 12, 15, 17, 27, 35, 47, 33, The Rotation(s) performed is/are _____

(A) LR (B) RL

(C) LL (D) RR

Q9 What is the maximum height of any AVL-tree with 7 nodes? Assume that the height of a tree with a single node is 0.

Q10 In binary search tree, which traversal is used for getting ascending order values?

(A) In order (B) Pre-order

(C) Post-order (D) Level order

Answer Key

Q1	A
Q2	D
Q3	A
Q4	C
Q5	D
Q6	A, B, D
Q7	3
Q8	A, B
Q9	3
Q10	A

Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:
A

Q2 Text Solution:
D

Q3 Text Solution:
A

Q4 Text Solution:
C

Q5 Text Solution:
D

Q6 Text Solution:
ABD

Q7 Text Solution:
3

Q8 Text Solution:
AB

Q9 Text Solution:
3

Q10 Text Solution:
A