CS & DA

GATE

Data Structure through Python

DPP: 1

Tree

Q1 Which of the below statement is/are Invalid?
(A) Every Perfect Binary Tree is a Complete Binary Tree
(B) Every Complete Binary Tree is a Full Binary Tree
(C) Every Full Binary Tree is a Complete Binary Tree
(D) Every Full Binary Tree is a Perfect Binary Tree

Q2 The Number Of Nodes in a Perfect binary tree at level 6 will be _____
(NOTE: Level Numbering started from 1)

Q3 The number of leaf nodes in a binary tree, if there are 6 nodes with 2 children is ____

Q4 The Minimum number of nodes with height 2n in a binary tree will be _____
(A) n (B) n+1
(C) n-1 (D) 2n

Q5 The number Of labelled binary trees with 4 nodes is _____
(A) 14 (B) 24
(C) 336 (D) 70

Q6 Identify False Statement(s) from below:
(A) Every Binary Heap is a CBT.
(B) Every CBT is a Binary Heap.
(C) Every PBT is a CBT.
(D) Every CBT is a PBT.

Q7 The number of Unlabelled and Labelled binary trees possible with 5 elements is _____ and _____ respectively.
(A) 7, 840 (B) 42, 840
(C) 7, 5040 (D) 42, 5040

Q8 In _____ binary tree, the number of nodes will be maximum with minimum height.
(A) Full binary Tree
(B) Skewed binary tree
(C) Perfect Binary Tree
(D) Degenerated binary Tree

Q9 Consider a full binary tree with 15 leaf nodes. Then, the number of internal nodes and total nodes in tree are respectively _____ and _____
(A) 15, 30 (B) 14, 29
(C) 15, 31 (D) 16, 31

Q10 The minimum height of binary tree possible with 12 Nodes is _____
(A) 2 (B) 3
(C) 4 (D) 5

GATE

Answer Key

Q1	(B, C, D)
Q2	32
Q3	7
Q4	(B)
Q5	(C)
Q6	(B, D)
Q7	(D)
Q8	(C)
Q9	(B)
Q10	(B)