Unit-IV-Trees Question Bank
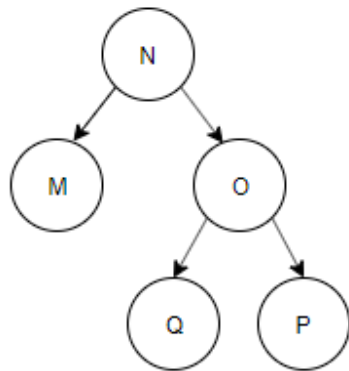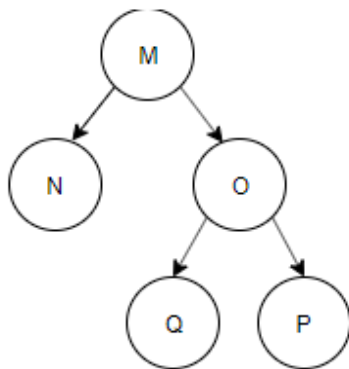
1	The number of edges from the root to the node is called _____ of the tree. a) Height b) Depth c) Length d) Width Answer: b)
2	The number of edges from the node to the deepest leaf is called _____ of the tree. a) Height b) Depth c) Length d) Width Answer: a)
3	What is a full binary tree? a) Each node has exactly zero or two children b) Each node has exactly two children c) All the leaves are at the same level d) Each node has exactly one or two children Answer: a)

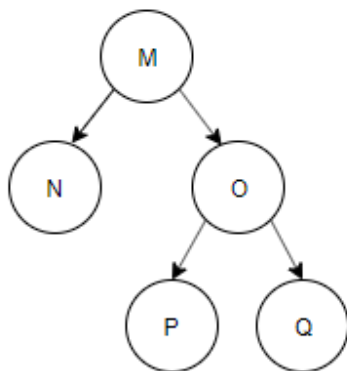|	
4	What is a complete binary tree? a) Each node has exactly zero or two children b) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from right to left c) A binary tree, which is completely filled, with the possible exception of the bottom level, which is filled from left to right d) A tree In which all nodes have degree 2 Answer: c)
5	What is the average case time complexity for finding the height of the binary tree? a) $h = O(\log\log n)$ b) $h = O(n\log n)$ c) $h = O(n)$ d) $h = O(\log n)$ Answer: d)
6	In a full binary tree if number of internal nodes is I, then number of leaves L are? a) $L = 2*I$ b) $L = I + 1$ c) $L = I - 1$ d) $L = 2*I - 1$ Answer: b)

7	In a full binary tree if number of internal nodes is I, then number of nodes N are? a) N = 2*I b) N = I + 1 c) N = I – 1 d) N = 2*I + 1 Answer: d)
8	In a full binary tree if there are L leaves, then total number of nodes N are? a) N = 2*L b) N = L + 1 c) N = L – 1 d) N = 2*L – 1 Answer: d)
9	Construct a binary tree by using postorder and inorder sequences given below. Inorder: N, M, P, O, Q Postorder: N, P, Q, O, M a)

b)

```
        N
       / \
      M   O
         / \
        Q   P
```

c)

```
        M
       / \
      N   O
         / \
        Q   P
```

d)

```
        M
       / \
      N   O
         / \
        P   Q
```
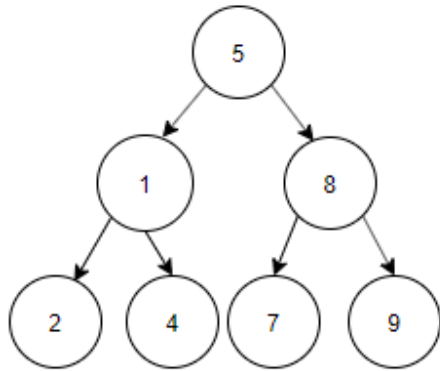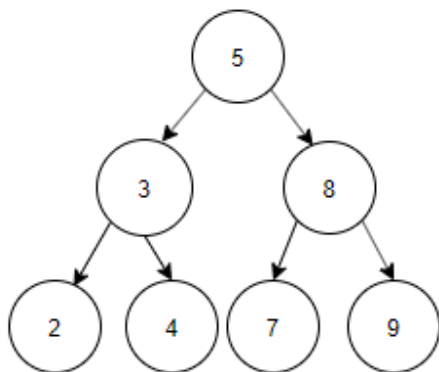
Answer: d)

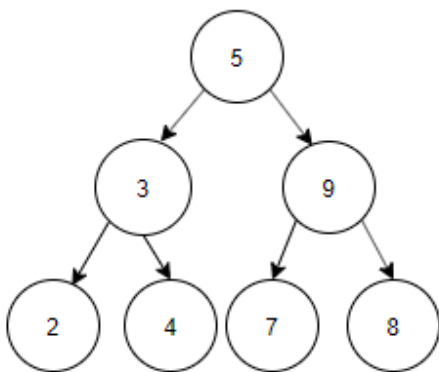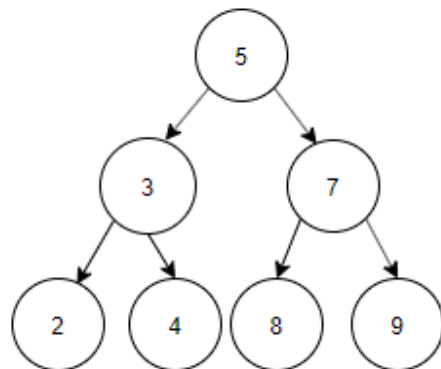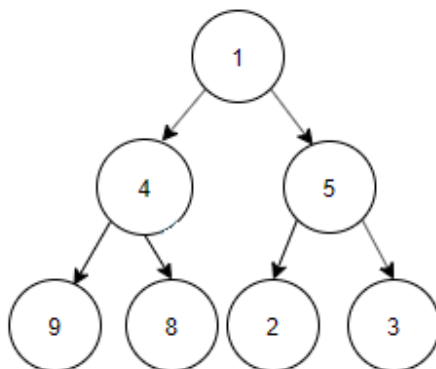| 10	Construct a binary search tree by using postorder sequence given below.

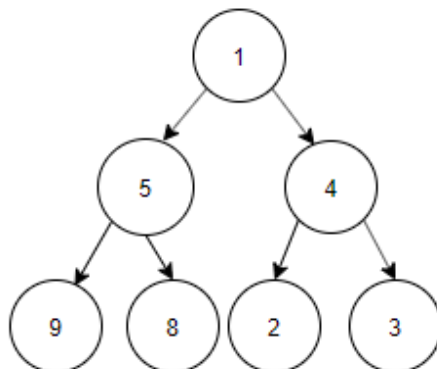Postorder: 2, 4, 3, 7, 9, 8, 5.

a)

b)

c)

11 | Construct a binary tree using inorder and level order traversal given below.

Inorder Traversal: 3, 4, 2, 1, 5, 8, 9

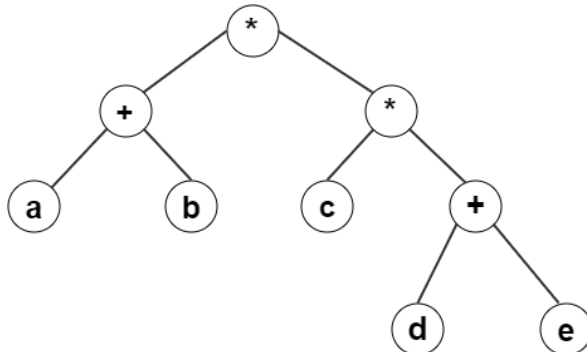Level Order Traversal: 1, 4, 5, 9, 8, 2, 3

a)

b)

c)

d)

Answer: a)

12	The expression obtained by recursively producing a left expression, followed by an operator, followed by recursively producing a right expression is called?
	a) prefix expression
	b) infix expression
	c) postfix expression
	d) paranthesized expression
	Answer: b)

13	The average depth of a binary tree is given as? a) O(N) b) O(log N) c) O(M log N) d) O($\sqrt{N}$) Answer: d)
14	An expression tree is created using? a) postfix expression b) prefix expression c) infix expression d) paranthesized expression Answer: a)
15	++a*bc*+defg is an? a) postfix expression b) infix expression c) prefix expression d) invalid expression Answer: c)

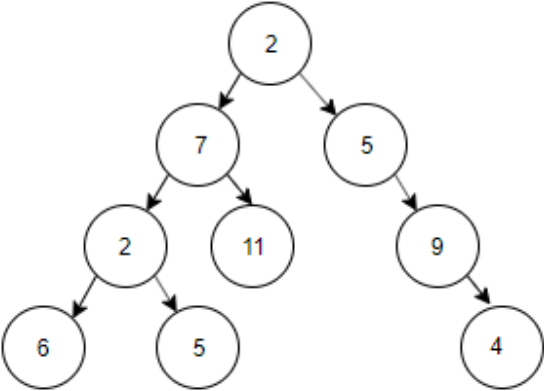| 16	What is the postfix expression for the following expression tree?
	a) abcde++**
	b) ab+cde+**
	c) abc+de+**
	d) abcd+*e+*
	Answer: b)
17	In an expression tree algorithm, what happens when an operand is encountered?
	a) create one node pointing to a stack
	b) pop the nodes from the stack
	c) clear stack
	d) merge all the nodes
	Answer: a)
18	What does the other nodes of an expression tree(except leaves) contain?
	a) only operands
	b) only operators
	c) both operands and operators
	d) expression

	Answer: b)
19	
20	For the tree below, write the in-order traversal. a) 6, 2, 5, 7, 11, 2, 5, 9, 4 b) 6, 5, 2, 11, 7, 4, 9, 5, 2 c) 2, 7, 2, 6, 5, 11, 5, 9, 4 d) 2, 7, 6, 5, 11, 2, 9, 5, 4 Answer: a)