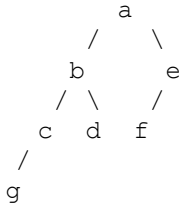
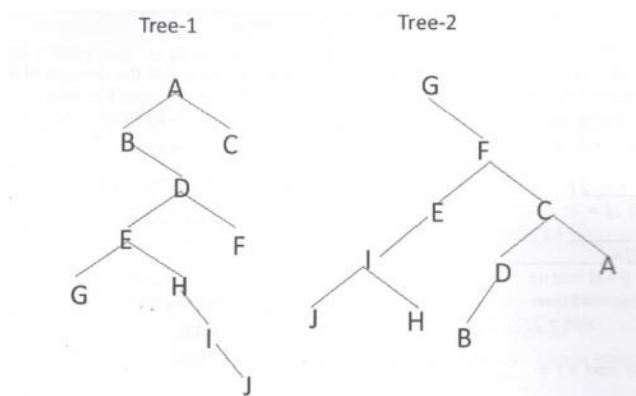


Tutorial-1

- Let A and B be sets and let A^c and B^c denote the complements of the sets A and B . The set $(A-B) \cup (B-A) \cup (A \cap B)$ is equal to
 A) $A \cup B$ B) $A^c \cup B^c$ C) $A \cap B$ D) $A^c \cap B^c$
- Which of the following sequences denotes the post order traversal sequence of the given tree?

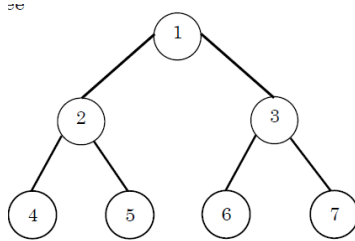


- (A) f e g c d b a (B) g c b d a f e (C) g c d b f e a (D) f e d g c b a
- Assume that the operators $+$, $-$, \times are left associative and $^$ is right associative. The order of precedence (from highest to lowest) is $^$, \times , $+$, $-$. The postfix expression corresponding to the infix expression is $a + b \times c - d \wedge e \wedge f$
 (A) $abc \ x + def \wedge \wedge -$ (B) $abc \ x + de \wedge f \wedge -$
 (C) $ab + c \times d - e \wedge f \wedge$ (D) $- + a \times b \ c \wedge \wedge def$
 - If Tree-1 and Tree-2 are the trees indicated below:



- Which traversals of Tree-1 and Tree-2, respectively, will produce the same sequence?
 (A) Preorder, postorder (B) Postorder, inorder
 (C) Postorder, preorder (D) Inorder, preorder
- The in-order and pre-order traversal of a binary tree are d b e a f c g and a b d e c f g respectively. The post order traversal of a binary tree is
 (A) e d b g f c a (B) e d b f g c a (C) d e b f g c a (D) d e f g b c a
 - The in-order traversal of a tree resulted in FBGADCE. Then the pre-order traversal of that tree would result in
 (A) FGBDECA (B) ABFGCDE (C) BFGCDEA (D) AFGBDEC

7. Consider the following tree



If the post order traversal gives $ab-cd^{*+}$ then the label of the nodes 1,2,3,... will be
 (A) $+,-,*,a,b,c,d$ (B) $a,-,b,+,c,*,d$ (C) $a,b,c,d,-,*,+$ (D) $-,a,b,+,*,c,d$

8. Choose the equivalent prefix form of the following expression

$(a + (b - c)) * ((d - e) / (f + g - h))$

(A) $* +a - bc / - de - + fgh$

(B) $* +a - bc - / de - + fgh$

(C) $* +a - bc / - ed + - fgh$

(D) $* +ab - c / - ed + - fgh$

9. The inorder and preorder Traversal of binary Tree are dbeafcg and abdecfg respectively. The post-order Traversal is _____.

(A) dbefacg

(B) debfagc

(C) dbefcga

(D) debfgca

10. The following three are known to be the preorder, inorder and postorder sequences of a binary tree. But it is not known which is which.

MBCAFHPYK

KAMCBYPFH

MABCKYFPH

Pick the true statement from the following.

(A) I and II are preorder and inorder sequences, respectively

(B) I and III are preorder and postorder sequences, respectively

(C) II is the inorder sequence, but nothing more can be said about the other two sequences

(D) II and III are the preorder and inorder sequences, respectively

11. Which of the following statement is false?

(A) A tree with n nodes has $(n-1)$ edges.

(B) A labeled rooted binary tree can be uniquely constructed given its postorder and preorder traversal results.

(C) A complete binary tree with n internal nodes has $(n+1)$ leaves.

(D) The maximum number of nodes in a binary tree of height h is $(2^{(h+1)} - 1)$.

12. Which of the following pairs of traversals is not sufficient to build a binary tree from the given traversals?

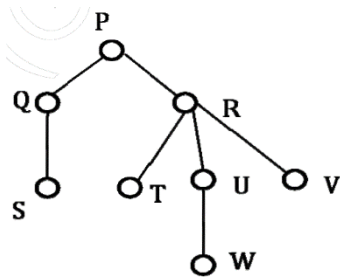
(A) Preorder and Inorder

(B) Preorder and Postorder

(C) Inorder and Postorder

(D) None of the Above

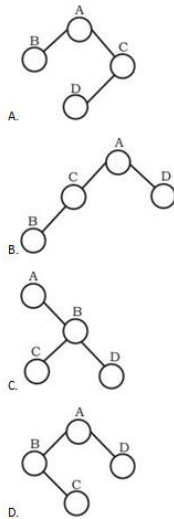
13. Consider the following rooted tree with the vertex P labeled as root



The order in which the nodes are visited during in-order traversal is

- (A) SQPTRWUV (B) SQPTURWV (C) SQPTWUVR (D) SQPTRUWV

14. Which one of the following binary trees has its inorder and preorder traversals as BCAD and ABCD, respectively?



- (A) A (B) B (C) C (D) D

15. Consider the label sequences obtained by the following pairs of traversals on a labeled binary tree. Which of these pairs identify a tree uniquely?

- (i) preorder and postorder
- (ii) inorder and postorder
- (iii) preorder and inorder
- (iv) level order and postorder

- (A) (i) only (B) (ii), (iii) (C) (iii) only (D) (iv) only

16. What is common in three different types of traversals (Inorder, Preorder and Postorder)?

- (A) Root is visited before right subtree
- (B) Left subtree is always visited before right subtree
- (C) Root is visited after left subtree
- (D) All of the above
- (E) None of the above