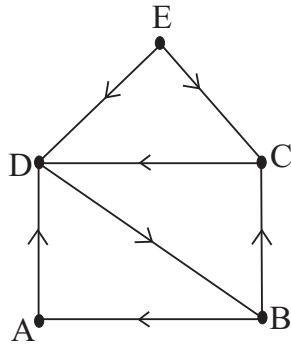


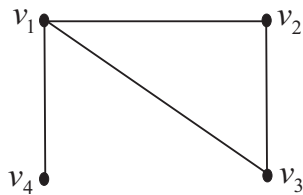
1. The sum of the indegrees for the following graph is



- A. 7
- B. 8
- C. 9
- D. 10

ANSWER: A

2. The adjacency matrix for the following graph is



A.
$$\begin{pmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 1 \\ 1 & 1 & 0 & 1 \\ 1 & 0 & 0 & 0 \end{pmatrix}$$

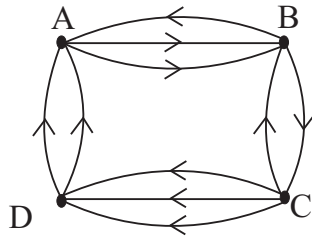
$$\text{B. } \begin{pmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{pmatrix}$$

$$\text{C. } \begin{pmatrix} 0 & 1 & 1 & 1 \\ 1 & 0 & 1 & 0 \\ 1 & 1 & 0 & 0 \\ 1 & 1 & 1 & 0 \end{pmatrix}$$

$$\text{D. } \begin{pmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{pmatrix}$$

ANSWER: B

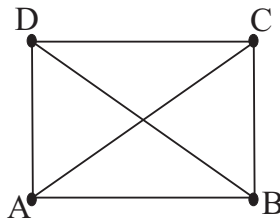
3. The sum of the out degrees for the following graph is



- A. 6
- B. 8
- C. 10
- D. 12

ANSWER: C

4. The sum of the degrees of all the vertices for the following graph is



- A. 6
- B. 8
- C. 10
- D. 12

ANSWER: D

5. The minimum height of a 9-vertex binary tree is equal to ———- where $\lceil x \rceil$ denotes the smallest integer greater than or equal to x .

- A. $\lceil \log_2 10 + 2 \rceil$
- B. $\lceil \log_2 10 - 2 \rceil$
- C. $\lceil \log_2 10 + 1 \rceil$
- D. $\lceil \log_2 10 - 1 \rceil$

ANSWER: D

6. If a full binary tree contains 11 vertices then the number of pendent vertices of the tree is

- A. 5
- B. 6
- C. 7
- D. 8

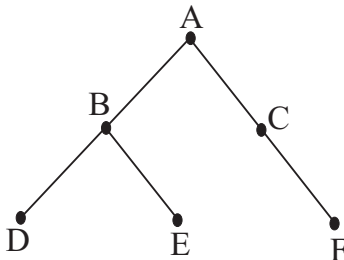
ANSWER: B

7. If every internal vertex of a rooted tree has atmost 2 children, then the tree is called a ———

- A. spanning tree
- B. binary tree
- C. full m - ary tree
- D. full binary tree

ANSWER: B

8. The inorder traversal for the following binary tree is



- A. DEBCAF
- B. DEBACF
- C. DBEACF
- D. DBECFA

ANSWER: C

9. The maximum height of the 11-vertex binary tree is

A. 5

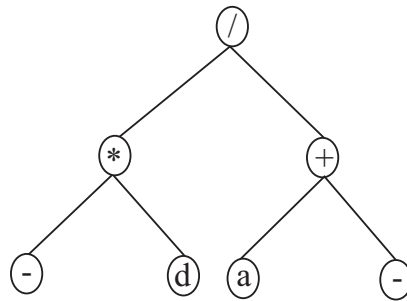
B. 6

C. 7

D. 8

ANSWER: A

10. The post fix form of the following graph is



A. $- * ad - + /$

B. $- d * a + - /$

C. $d - * a - + /$

D. $- d * a - + /$

ANSWER: D

11. The value of the post fix expression $825 - 13 - * /$ is

A. $4/3$

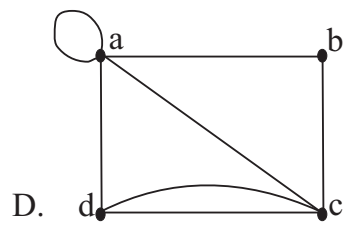
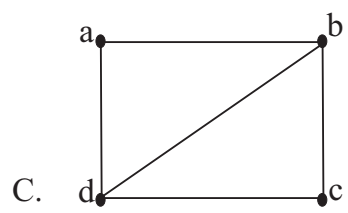
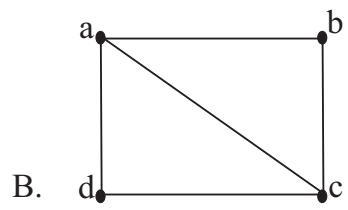
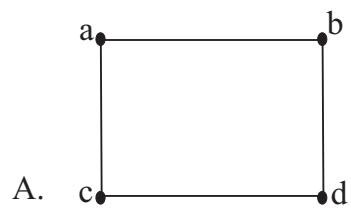
B. $5/3$

C. $7/3$

D. $8/3$

ANSWER: A

12. Which of the following graph is a pseudograph?



ANSWER: D