REV-01
BCA/43/48

2025/05

**SET B**

# BACHELOR OF COMPUTER APPLICATION
## SECOND SEMESTER
## DATA STRUCTURE
## BCA-202

[USE OMR FOR OBJECTIVE PART]

**Duration: 1.30 hrs.** **Full Marks: 35**

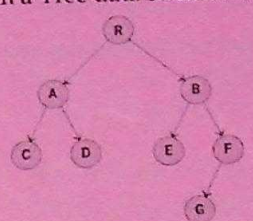
**Objective**

**Time: 15 min.** **Marks: 10**

*1X10=10*

***Choose the correct answer from the following:***

1. In a Tree data structure, like the one below




Nodes C, D, E, and G are called .....

a. Parent node
b. Leaf node
c. Root node
d. Child node

2. Consider a complete graph G with 4 vertices. The graph G has ____ spanning trees.

a. 16
b. 8
c. 4
d. 1

3. The number of elements in the adjacency matrix of a graph having 4 vertices is .....

a. 4
b. 16
c. 8
d. 32

4. What is the maximum number of children that a binary tree node can have?

a. 0
b. 1
c. 2
d. 3

5. In a stack, the data item placed on the stack first is

a. the first data item to be removed
b. the last data item to be removed
c. given an index of maximum size
d. not given as index number

6. In ..... type of search the list should be on sorted order.

a. Sequential search
b. Binary search
c. Both A and B
d. None of the above

7. The given array is arr = {1, 2, 4, 3,7}. Bubble sort is used to sort the array elements. How many iterations will be done to sort the array?
   a. 4 b. 2
   c. 3 d. None of the above

8. Finding an element, whether that is present in a list or not. It is called.....
   a. Sorting b. Searching
   c. Storing d. None of the above

9. A variant of linked list in which last node of the list points to the first node of the list is?
   a. Doubly linked list b. Singly linked list
   c. Hybrid linked list d. Circular linked list

10. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?
   a. ABCD b. DCBA
   c. DCAB d. ABDC

-- --- --

## Descriptive

Time : 1 hrs. 15 min. Marks : 25

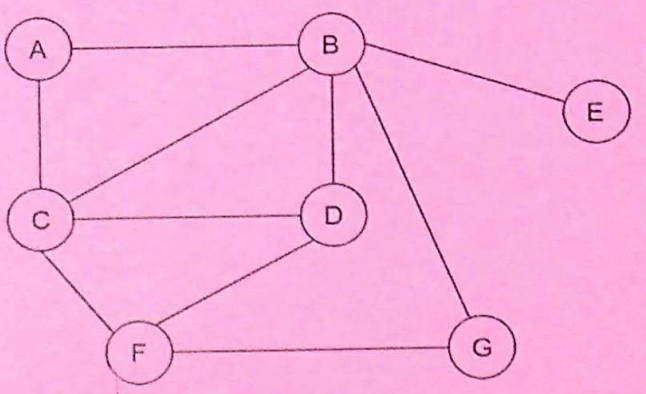
*[ Answer question no.1 & any two (2) from the rest ]*

1. What is data structure? Explain the types of basic searching techniques with examples. 5

2. What is Queue? Explain different types of queue. 2+8=10

3. Write a 'C' program to arrange the numbers in ascending order using Selection Sort technique. 10

4. Traverse the below graph using Depth First Search and Breadth First Search. 10

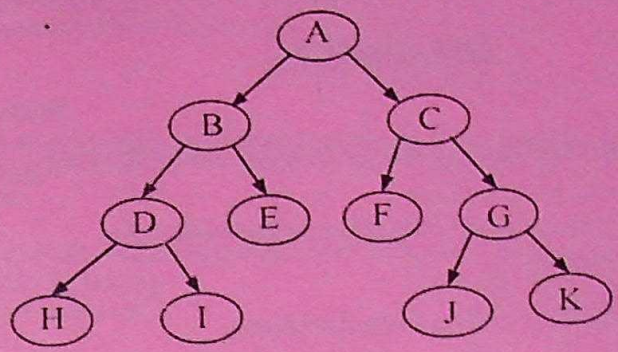



5. i. Construct a Binary Tree from Inorder and Postorder Traversal 5+5=10

Postorder= D F E B G L J K H C A

Inorder = D B F E A G C L J H K

ii. For the tree below, write the in-order, pre-order and post-order traversal


A
B
C
D
E
F
G
H
I
J
K

= = *** = =