Second Semester BCA Degree Examinations

May /June 2026

(New syllabus 2024-25 SEP Scheme)

SBB0210 : Data Structure Using C

Time: 3 hrs.] *[Max.Marks:80*

Instruction to the Candidates :

1. *The student should legibly write Section number along with question numbers within the margin only.*
2. *The answers without Section number and question numbers will not be valued.*
3. *Do not write anything (except register number) on the question paper.*

SECTION – A

I. Answer all the following questions. **(2X10=20)**

1.

a) What are Data structures ? Mention any two applications of Data structures.

b) Define Stack. What are the different operations that can be performed on stack ?

c) What is underflow and overflow in Queues ? Explain.

d) Explain two different categories in sorting.

e) Define Linked list. How Linked list is represented using an array.

f) What are the applications of Linked list ?

g) Write pictorial representation of circular linked list.

h) Define Complete Binary Tree and Strictly Binary Tree.

i) What is Parent node and Root node ?

j) Write a note on BST.

SECTION – B

II. Answer any SIX of the following. **(5X6=30)**

2. Explain classifications of Data structures in detail.
3. Evaluate the following postfix expression using Stack : 653 +*33/-
4. Write an algorithm to sort 'n' numbers using Bubble sort technique.

Contd...2

5. Sort the following elements using selection sort method

25, 28, 10, 5, 16, 56, 40

6. Explain the operations of singly linked list.

7. What is Dynamic memory Allocation ? Write its advantages and disadvantages

8. What is Binary tree ? Explain the type of Binary trees.

9. Write a C program to implement inorder traversal of a binary tree.

SECTION – C

III. **Answer any THREE questions.** **(10X3=30)**

10. Convert the following Infix expression into Postfix form using stack.

a) ((A +((B^C) – D)) * (E – (A / C)))

b) Write a C function to find GCD using recursion. **(7+3)**

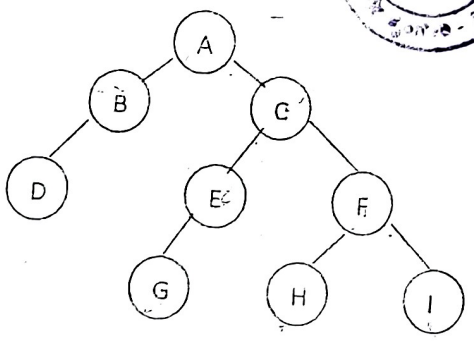
11. a) What is Circular Queue ? Explain the operations on Circular Queue.

b) What is Binary Search ? Search an element "35" in the following sequence using Binary Search Technique : 05, 08, 10, 12, 15, 18, 20, 22, 30, 35, 40, 45, 50, 60. **(5+5)**

12. Explain the Insertion operation of singly linked list at the beginning and at the end of list with an algorithm. **(10)**

13. a) Define the following Tree terminologies : Child, Degree, Edge and Path.

b) Write the In order, Pre order and Post order Traversal for the Tree below. **(4+6)**



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