21BCA2C4DSL

Sl. No.

BCA II Semester Degree Examination, Sept./Oct. - 2024
COMPUTER SCIENCE
DSC-4 : Data Structure Using C
(NEP)

Time : 2 Hours   Maximum Marks : 60

SECTION - A

Answer **all** sub-questions. Each sub-question carries **1** mark.   **10x1=10**

1. (a) Define Data structure.

    (b) What is Recursion ?

    (c) Mention different types of an array.

    (d) What is Searching ?

    (e) Define singly linked list.

    (f) Write the structure of a node in Doubly linked list.

    (g) Define Stack.

    (h) Name any two different types of queues.

    (i) Define binary tree.

    (j) What is root node ?

SECTION - B

Answer **any four** questions. Each question carries **5** marks.   **4x5=20**

2. Explain dynamic memory allocation functions with syntax.

3. Explain representation of linear array in memory.

4. Write an algorithm to insert a node in singly linked list.

5. Explain evaluation of postfix expression with an example.

6. Explain strict and complete binary tree.

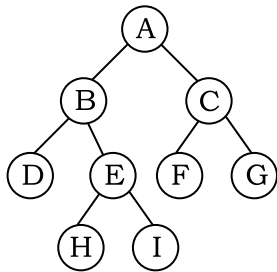7. Write a C program to sort elements in an array using selection sort.

SECTION - C

Answer **any three** questions. Each question carries **10** marks. **3x10=30**

8. Explain types of data structures.

9. Write an algorithm of binary search with an example.

10. Write a note on various types of linked list with an example.

11. Explain PUSH and POP Operations in stack.

12. With traversing steps write pre-order, in-order and post-order traversal for the following binary tree.

- o O o -