



**B.C.A. II Semester (NEP) Degree Examination,
September/October - 2022
COMPUTER SCIENCE
Data Structure Using C**

Time : 3 Hours

Maximum Marks : 60

SECTION - A

1. Answer the following sub-questions. Each sub-question carries **one** mark. **10x1=10**
- (a) What is Data structure ?
 - (b) Define Recursion.
 - (c) Name the different types of Arrays.
 - (d) What is Sorting ?
 - (e) What is circular linked list ?
 - (f) Define Garbage collection.
 - (g) What is Stack ?
 - (h) What is double ended queue ?
 - (i) Define degree of a node in a tree.
 - (j) What is binary search tree ?

SECTION - B

Answer **any four** of the following questions. Each question carries **five** marks.

4x5=20

- 2. What is primitive data structure ? Explain the different types of it.
- 3. Explain in brief representation of linear array in memory.
- 4. Write a C program to insert new element into linear array.
- 5. Write an algorithm to traverse singly linked list.
- 6. Write the applications of stack.
- 7. Explain strict and complete binary trees with example.

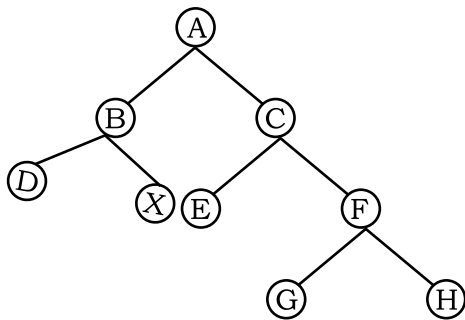


SECTION - C

Answer **any three** of the following questions. Each question carries **ten** marks.

3x10=30

8. Explain the different operations performed on data structure.
9. Write an algorithm to perform binary search.
10. With an algorithm, explain deletion operation on a singly linked list.
11. (a) Briefly explain infix, prefix and postfix expressions.
(b) Convert the following infix expression into its equivalent postfix expression.
 $(a+b) * (m/n) + (x+y)$
12. Write pre-order, In-order and post-order traversal for the following binary tree.



- o O o -

