2024

(Session : 2022-25)

Time : 3 hours

Full Marks : 60

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

(Very Short-answer Type Questions)

(Compulsory)

1. Answer the following questions : 1×10 = 10

   (a) What is Data structure ?

   (b) What is difference between Static and Dynamic memory allocation ?

   (c) What is Array ?

(d) What is Recursion ?

(e) Define Tree.

(f) Differentiate between Searching and Sorting.

(g) Define any three properties of C programming.

(h) What is Linked list ?

(i) What is Hash Table ?

(j) What is Limitation of Recursion ?

2. What is Infix, Prefix and Postfix expression ? Convert A + B * C into prefix and postfix. 5

Group – B
(Long-answer Type Questions)

Answer any **three** questions of the following :

3. WAP to find matrix addition of two matrix of size [2×2]. 15

4. Define Linked list and its types with suitable algorithm. 15

5. (a) Mention various application of the stack with suitable example. 10

(b) WAP using recursion to find factorial of any number. 5

6. (a) WAP to insert 10 no's in an array, arrange them in ascending order using any sorting method. 8

(b) Write the algorithm of Binary Search Method. 7

7. Write short notes on any **three** of the following : 5×3 = 15

(a) Binary Tree

(b) Height Balanced Tree

(c) AVL Tree

(d) Shell Sort

(e) Hash Function

(f) De-queue

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