DATA STRUCTURE USING PYTHON

Time : 2:30 Hours]   **[Maximum Marks : 50**

NOTES :

i) Attempt **all** questions.

ii) Students are advised to specially check the Numerical Data of question paper in both versions. If there is any difference in Hindi Translation of any question. the students should answer the question according to the English version.

iii) Use of Pager and Mobile Phone by the students is not allowed.

Q1) Answer any two of the following: [2 × 5 = 10]

a) Explain Data types :

b) Write following operations performed on arrays :

    i) Searching   ii) Sorting

c) Explain overflow and underflow of stack.

Q2) Answer any two of the following: [2 × 5 = 10]

a) Explain Insertion, deletion operation on a queue.

b) Explain Bubble Sort with example.

c) Explain Merge Sort with example.

Q3) Answer any two of the following: [2 × 5 = 10]

a) Convert the following Infix expression into Postfix expression :-

$A + B \uparrow C / E \uparrow F * K$

b) Explain Linear Search in detail.

c) Explain Binary Search in detail.

Q4) Answer any two of the following: [2 × 5 = 10]

a) Sort the following list of element using Insertion sort.

66, 33, 40, 22, 55. 88. 60. 11, 80, 20, 50, 44, 77, 30

b) Write note on quick sort.

c) Write notes on doubly linked list.

Q5) Answer any two of the following: [2 × 5 = 10]

a) Draw the binary search tree and Heap from the following elements :

15, 20, 25, 30, 33, 40, 44, 50, 60, 75, 80, 90

b) Differentiate between DFS and BFS?

c) What is binary tree? Explain Inorder, Preorder and Postorder traversal.