313306

12425

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answer with neat sketches wherever necessary.

(4) Assume suitable data, if necessary.

(5) Use of Non-programmable Electronic Pocket Calculator is permissible.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) List the four features of Python.

b) State any two basic tuple operations with suitable example.

c) List any four built in packages in Python.

d) Define the terms:

i) tree

ii) graph.

e) Define the terms:

i) class

ii) object.

f) Define linear data structure.

g) State any two types of sorting techniques.

P.T.O.

Marks

2. Attempt any THREE of the following: **12**

a) Write Python program to print the following:

1

2 3

4 5 6

7 8 9 10

b) Describe four operations on tuple data.

c) Explain binary search tree.

d) Develop a program to implement linear search.

3. Attempt any THREE of the following: **12**

a) State any two control statements in Python with suitable example.

b) Develop Python program to perform create and access operation on set.

c) Describe doubly linked list in data structure with example.

d) Explain any four tree terminology with example.

4. Attempt any THREE of the following: **12**

a) Write a Python program to print sum of digits of given number (take input from user).

b) Describe how to access, delete and update values in dictionary in Python.

c) Write a Python program for importing module for addition and subtraction of two numbers.

d) Develop a Python program for single inheritance.

e) Explain preorder, postorder and inorder traversal of trees with example.

Marks

5. Attempt any TWO of the following: **12**

a) Write a Python program to implement bubble sort.

b) Develop a Python program to implement any four methods of Numpy package.

c) Write a program to find following in the list:

S = [4, 8, –10, –6, 15, 25, 200]

i) Smallest number in the list.

ii) Largest number in the list.

iii) Sum of all elements in the list.

6. Attempt any TWO of the following: **12**

a) Write a Python program to create class rectangle with data members length and breadth. Create suitable methods for reading and printing area and perimeter of rectangle.

b) Explain how to convert an infix expression into postfix using an example.

c) Given the following binary tree:

Write preorder, inorder an postorder traversal.

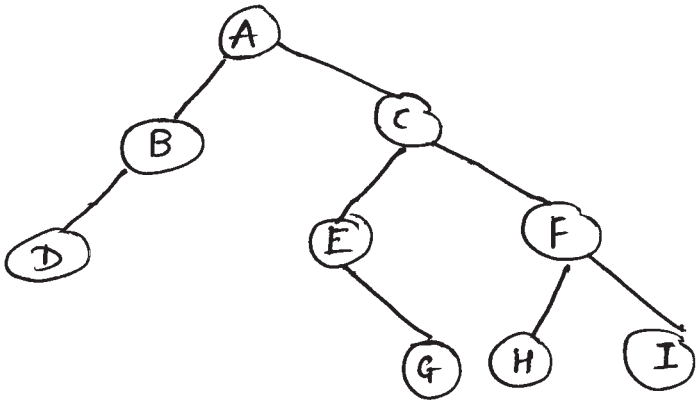

Fig. No. 1