

22395

22223

3 Hours / 70 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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) Write a syntax to create list in python.
 - b) State any two basic tuple operations in python with suitable example.
 - c) Define the terms:
 - i) class
 - ii) object
 - d) Describe the concept of data hiding in python.
 - e) Define non-linear data structure with suitable example.
 - f) Define the terms
 - i) tree
 - ii) graph
 - g) Define any two tree terminology with example.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) State any two control statements in python with suitable example.
 - b) Describe any four built-in functions in python with suitable example.
 - c) Write a python program for importing module for addition and subtraction of two numbers.
 - d) Describe array VS list with example.
 - e) Explain breadth first search in graph with example.
- 3. Attempt any THREE of the following:** **12**
- a) Enlist data types in python. Describe any two with suitable example.
 - b) Describe how to access, delete and update values in dictionary in python.
 - c) Write a python program to create a singly linked list and append two items in it.
 - d) Compare between weighted graph and unweighted graph.
 - e) Explain method overriding with example.
- 4. Attempt any THREE of the following:** **12**
- a) Compare local and global variables. (Any four points)
 - b) Describe any four built-in functions of numpy with suitable example.
 - c) Develop a python program for single inheritance.
 - d) Explain depth first search with example.
 - e) Write a python program for bubble sort.

5. Attempt any THREE of the following: 12

- a) Explain membership operator in python with example.
- b) Write a program using numpy module to print basic characteristics of numpy 2-D array such as:
 - i) shape
 - ii) dimension
 - iii) size
 - iv) type
- c) Write a python program to calculate area of rectangle and area of square using method overloading.
- d) Differentiate between linear and non-linear data structure in python. (Any four points)
- e) Write a python program for implementation of circular linked list.

6. Attempt any TWO of the following: 12

- a) Write output for the following print statements:

```
>> a = {"monday", "Tuesday", "Wednesday", "Thursday", "Sunday"}
>> b = {"Friday", "Saturday", "Sunday"}
>> C = a | b
>> Print (c)
>> d = a & b
>> Print (d)
>> e = a - b
>> Print (e)
>> f = a ^ b
>> Print (f)
```
 - b) Explain modules in python with example.
 - c) Write a python program for implementation of queue using list.
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