**Giri’s TechHub Pvt Ltd. Pune**

**Python Full Stack August -24**

Date: 08-03-2025

Duration: 3Hrs

**List based questions**

1. Write a Python program to reverse a list without using the built-in reverse() function.
2. How can you find the maximum and minimum values in a list without using max() and min() functions?
3. Write a program to remove duplicate elements from a list while maintaining order.
4. Implement a sorting algorithm (like Bubble Sort) to sort a list without using sort().
5. How can you find the second largest number in a list without using sorting?
6. Write a program to merge two lists without using the + operator.
7. How can you count the frequency of each element in a list?
8. Write a Python program to find the intersection (common elements) of two lists.
9. How can you find the union of two lists without duplicates?
10. Write a program to rotate a list by n positions.

**Array based questions**

1. Write a Python program to create and print a NumPy array.
2. How can you find the sum of all elements in an array?
3. Write a program to find the maximum and minimum values in an array.
4. How can you calculate the mean of an array?
5. Write a program to reverse an array without using slicing.
6. How can you reshape a 1D array into a 2D array using NumPy?
7. Write a program to concatenate two NumPy arrays.
8. How can you find the standard deviation of an array?
9. Write a Python program to find unique elements in a NumPy array.
10. How can you find the transpose of a given matrix using NumPy?

**Set based questions**

1. Write a Python program to create a set and print its elements.
2. How can you find the union of two sets?
3. Write a program to find the intersection of two sets.
4. How can you find the difference between two sets?
5. Write a program to find the symmetric difference of two sets.
6. How can you add an element to a set?
7. Write a program to remove a specific element from a set.
8. How can you check if one set is a subset of another?
9. Write a program to clear all elements from a set.
10. How can you check if two sets are disjoint?

**Class & Object -based questions**

1. Write a Python program to create a simple class Person with a name attribute.
2. How can you define a class with a method that prints a message when called?
3. Write a program to create a class Student with a parameterized constructor to initialize name and age.
4. How can you create a class with multiple methods, including one for setting values and another for displaying them?
5. Write a Python program to create a class with an attribute and a method that modifies its value.