

## **PYTHON PROGRAMMING ASSIGNMENT QUESTIONS**

1. Explain the basic data types available in Python with examples.
2. Explain the Identifiers, Keywords, Statements, Expressions, and Variables in Python programming language with examples.
3. Describe Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators and Bitwise Operators in detail with examples.
4. Describe the **is** and **is not** operators and `type()` function. Also, discuss why Python is called as dynamic and strongly typed language.
5. Illustrate the different types of control flow statements available in Python
6. Explain the salient features of Python.
7. Write Python expressions corresponding to these statements:
  - (a) The sum of the first seven positive integers
  - (b) The average age of Sara (age 65), Fatima (57), and Mark (age 45)
  - (c) 2 to the 20th power
  - (d) The number of times 61 goes into 4356
  - (e) The remainder when 4365 is divided by 61
8. Mention the advantages of Continue statement. Write a Program to compute only even numbers sum within the given natural numbers using continue statement.
9. Write the Python Programs to: i) find the largest of Three numbers ii) check whether the given year is a leap year or not.
10. Explain the following functions with examples i) `input()` ii) `range()` iii) `print()` iv) `eval()`
11. What are User defined functions? How can we pass Parameters in User Defined functions? Explain with suitable examples.
12. Write a Python Program to create a user defined function to find maximum and minimum letters in a String. Also find the length of the String without using inbuilt function.
13. What is Parameter Passing ? Explain Immutable and Mutable Parameter passing with examples.
14. The probability of getting  $n$  heads in a row when tossing a fair coin  $n$  times is  $2^{-n}$ . Implement function `prob()` that takes a nonnegative integer  $n$  as input and returns the probability of  $n$  heads in a row when tossing a fair coin  $n$  times .

```
>>> prob(1)
0.5
>>> prob(2)
0.25
```
15. Write a note on Python Standard Library.
16. What is a string? Write a Python Program to demonstrate traversal through a string with a loop. Also explain the concepts of String Slicing.
17. Write a Python Program to concatenate and Compare Two Strings and read the Strings from the user.
18. What are lists? Explain the concept of list Slicing and list traversing with example.
19. Explain about how to access values in lists, update lists, delete elements in list and Also explain basic list operations.
20. Compare and Contrast Tuples and Lists.
21. What is tuple? Explain: i) how to access values in tuples ii) built-in tuple functions.
22. Explain the use of `join()` and `split()` string methods with examples. Describe why strings are immutable with an example.

23. Discuss the relation between tuples and lists, tuples and dictionaries in detail.
24. Explain the concept of Type Conversion functions and math functions in python with examples.
25. List and Explain any four built in String manipulation functions supported by Python.
26. What are lists? Lists are mutable. Justify the statement with examples.
27. Explain working of While loop in python with suitable examples.
28. Write function vowelCount() that takes a string as input and counts and prints the number of occurrences of vowels in the string.  

```
>>> vowelCount('Le Tour de France')
```

a, e, i, o, and u appear, respectively, 1, 3, 0, 1, 1 times.
29. Write a Python Program to demonstrate Counting, Summing and Average of elements using loops.
30. Explain fileopen, fileclose, fileread and filewrite concepts in Python with example.
31. Write a Python program to accept a file name from user:
  - i) Display the first N-lines of the file.
  - ii) Find the frequency of occurrence of the word accepted from the user in the file.
32. Differentiate Pop and Remove methods on the lists. How to delete more than one element from a list.
33. Demonstrate: i) How a dictionary items can be represented as a list of tuples.  
ii) How tuples can be used as keys in dictionaries?
34. Explain with Syntax about Decision Control Statements with examples.
35. Write a note on Two-Dimensional Lists.
36. With Syntax. Explain the finite and infinite looping constructs in Python with example.
37. What is the need for break and continue statements? and Also write a note on pass Statement.
38. Implement function fib() that takes a nonnegative integer n as input and returns the nth Fibonacci number.  

```
>>> fib(0)
1
>>> fib(4)
5
>>> fib(8)
34
```
39. What is Exception? How to handle an Exception in Python?
40. Write a note on : i) except clause with no Exception .  
ii) except clause with Multiple Exception. iii) try-finally clause.
41. Write Python program to check for the presence of a key in the dictionary and find the sum all its values.
42. Write Pythonic code to sort a sequence of names according to their alphabetical order without using sort() function.
43. Write Python Program to count the number of times an item appears in the list.
44. Write Python program to perform a linear search for a given Key number in the list and report Success or Failure.
45. Write a Python program to remove duplicates from a list.
46. Write a Python program to get the frequency of the elements in a list.
47. Write a Python program to print a nested list (each list on a new line) using the print() function.

48. Write a Python program to replace the last element in a list with another list.
49. Write a Python program to iterate over two lists simultaneously
50. Write a Python program to remove the K'th element from a given list, print the new list.
51. Write a Python program to read a file line by line and store it into a list.
52. Write a python program to find the longest words.
53. Write a Python program to count the number of lines in a text file
54. Write a Python program that takes a text file as input and returns the number of words of a given text file.
55. Write a Python program to create a file where all letters of English alphabet are listed by specified number of letters on each line.
56. Write a Python program to find the repeated items of a tuple
57. Write a Python program to check whether an element exists within a tuple.
58. Can we convert list to tuple? If so, write a Python program to convert a list to a tuple.
59. Write a Python program to slice a tuple.
60. Write a Python program to reverse a tuple.