Python Practical

1. Make a Calculator with various arithmetical operations.

2. Write a Python function to produce the outputs

a) \*

\* \* \*

\* \* \* \* \*

\* \* \*

\*

(b) 1

232

34543

4567654

567898765

3. Write a program to illustrate various function of Maths module.

4. Write a function that takes the lengths of three sides: side1, side2 and side3 of the triangle as the input from the user using input function and return the area of the triangle as the output. Also, assert that sum of the length of any two sides is greater than the third side.

5. Consider a showroom of electronic products, where there are various salesmen. Each salesman is given a commission of 5%, depending on the sales made per month. In case the sale done is less than 50000, then the salesman is not given any commission. Write a function to calculate total sales of a salesman in a month, commission and remarks for the salesman. Sales done by each salesman per week is to be provided as input. Assign remarks according to the following criteria:

Excellent Sales >=80000 Good Sales>=60000 and <80000

60000>Average Sales>=40000 Work Hard Sales < 40000

6. Write a Python function to find the nth term of Fibonacci sequence and its factorial. Return the result as a list.

7. Write a function that takes a number with two or more digits as an input and finds its reverse and computes the sum of its digits.

8. Write a function that takes two numbers as input parameters and returns their least common multiple and highest common factor.

9. Write a function that takes a number as an input and determine whether it is prime or not.

10. Write a function that finds the sum of the n terms of the following series:

11. Write a Python function that takes two strings as an input from the user and counts the number of matching characters in the given pair of strings.

12. Write a Python function that takes a string as an input from the user and displays its reverse.

13. Write a function that takes a number (>=10) as an input and return the digits of the number as a set.

14. Write a Python function to calculate the sum and product of two compatible matrices.

15. Write a function that takes a list of numbers as input from the user and produces the corresponding cumulative list where each element in the list present at index i is the sum of elements at index j<=i.

16. Write a function that takes n as an input and creates a list of n lists such that ith list contains first five multiples of i.

17. Write a function that takes a sentence as input from the user and calculates the frequency of each letter. Use a variable of dictionary type to maintain the count.

18. Write a Python function that takes a dictionary of word: meaning pairs as an input from the user and creates an inverted dictionary of the form meaning: word.

19. Use dictionary to store marks of the students in 4 subjects. Write a function to find the name of the student securing highest percentage. (Hint: Names of students are unique).

20. Write a menu-driven program to accept a list of student names and perform the following

a). Search an element using linear search/ binary search.

b). Sort the elements using bubble sort/ insertion sort/ selection sort.

21. Usage of Python debugger tool-pydb and Python Tutor.

22. Write a program that makes use of a function to accept a list of n integers and displays a histogram.

23. Write a program that makes use of a function to display sine, cosine, polynomial and exponential curves.

24. Write a program that makes use of a function to plot a graph of people with pulse rate p vs. height h. The values of p and h are to be entered by the user.

25. Write a function that reads a file1 and displays the number of words and the number of vowels in the file.

26. Write a Python function that copies the content of one file to another.

27. Write a function that reads a file file1 and copies only alternative lines to another file ‘file2’. Alternative lines copied should be the odd numbered lines. Use Exception.

28. Consider a tuple t1= {1,2,5,7,9,2,4,6,8,10}. Write a program to perform following operations:

a) Print another tuple whose values are even numbers in the given tuple.

b) Concatenate a tuple t2= {11,13,15) with t1.

c) Return maximum and minimum value from this tuple.

29. Write a menu driven program to perform the following on strings:

a) Find the length of string.

b) Return maximum of three strings.

c) Accept a string and replace all vowels with “#”

d) Find number of words in the given string.

e) Check whether the string is a palindrome or not.

30. Write a Python program to perform the following using list:

a) Check if all elements in list are numbers or not.

b) If it is a numeric list, then count number of odd values in it.

c) If list contains all Strings, then display largest String in the list.

d) Display list in reverse form.

e) Find a specified element in list.

f) Remove the specified element from the list.

g) Sort the list in descending order.

h) accept 2 lists and find the common members in them.

31. Define a class Student to store his/ her name and marks in three subjects. Use a class variable to store the maximum average marks of the class. Use constructor and destructor to initialize and destroy the objects.