SYLLABUS

Subject: Computer Science   Semester: I
Course Title: Practical – I   Course Code: COMPC054
Max. Marks: 50   Time: 3 Hrs.
                                             Credits: 02

PYTHON - PROGRAMMING LAB LIST PROGRAMS

Section: A (Simple programs)

1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.

2. WAP to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria :

    Grade A: Percentage >=80

    Grade B: Percentage>=70 and <80

    Grade C: Percentage>=60 and <70

    Grade D: Percentage>=40 and <60

    Grade E: Percentage<40

3. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.

4. WAP to display the first n terms of Fibonacci series.

5. WAP to find factorial of the given number.

6. WAP to find sum of the following series for n terms: $1 - 2/2! + 3/3! - - - - - n/n!$

7. WAP to calculate the sum and product of two compatible matrices.

Section: B (Visual Python):

All the programs should be written using user defined functions, wherever possible.

1. Write a menu-driven program to create mathematical 3D objects

    I. curve

    II. sphere

    III. cone

IV. arrow

V. ring

VI. Cylinder.

2. WAP to read n integers and display them as a histogram.

3. WAP to display sine, cosine, polynomial and exponential curves.

4. WAP 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.

5. WAP to calculate the mass m in a chemical reaction. The mass m (in gms) disintegrates according to the formula m=60/(t+2), where t is the time in hours. Sketch a graph for t vs. m, where t>=0.

6. A population of 1000 bacteria is introduced into a nutrient medium. The population p grows as follows:

P(t) = (15000(1+t))/(15+ *e)*

where the time t is measured in hours. WAP to determine the size of the population at given time t and plot a graph for P vs t for the specified time interval.

7. Input initial velocity and acceleration, and plot the following graphs depicting equations of motion:

I. velocity wrt time (v=u+at)

II. distance wrt time (s=u*t+0.5*a*t*t)

III. distance wrt velocity (s=(v*v-u*u)/2*a)