19BSM406P - Programming with Python Lab

Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs./Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
--	--	2	1	2	--	--	--	50	50	100

OBJECTIVES

1. To learn various programming operations using the Python Programming.
2. Able to write computational codes for scientific research using Python Programming.
3. Able to test, solve errors and debug codes written in Python.

SYLLABUS

Students will be able to learn various programming concepts and implement those concepts in the following practical tasks to be performed in practical lab hours:

- Write a program to obtain sum, product all the numbers in the list.
- Write a program to obtain the largest and smallest number from a list.
- Write a program to obtain the list of prime numbers in given range.
- Write a program to generate list of even and odd numbers.
- Write a program to obtain LCM and GCD of given numbers.
- Write a program to obtain the root of an equation using various bracketing and open-ended numerical methods.
- Write a program to demonstrate numerical differentiation and integration.
- Write a program to demonstrate graphical representation of a data.
- Write a program to calculate probability and various statistical measures.
- Write a program to perform various set theory operations on set data type and represent the obtained set through Venn diagrams in Python.

OUTCOMES

CO 1: To learn basic syntax and programming operations in Python.
CO 2: To learn the basic concept of programming with python and their application for the implementation of various mathematical methods.
CO 3: Learn various features of Python Programming.
CO 4: To develop know-how in creating applications using the Python Programming language.
CO 5: To be able to correctly use various data types available in Python programming language and apply them in solving computational problems.
CO 6: Analyze programming errors in create effective and efficient computational codes.

TEXTS AND REFERENCES

1. John V Guttag. “Introduction to Computation and Programming Using Python”, Prentice Hall of India.
2. Allen Downey, Jeffrey Elkner and Chris Meyers "How to think like a Computer Scientist, Learning with Python", Green Tea Press.
3. Swaroop C H. "A Byte of Python", http://www.swaroopch.com/notes/python
4. "Python Programming", http://en.wikibooks.org/wiki/Python_Programming