MCAE08

RAMAIAH
INSTITUTE OF TECHNOLOGY

USN	1	M	S							

(Autonomous Institute, Affiliated to VTU)
Bangalore – 560 054

SUPPLEMENTARY SEMESTER EXAMINATIONS – AUGUST 2017

Course & Branch	:	Master of Computer Applications	**Semester**	:	IV
Subject	:	**Programming with Python**	**Max. Marks**	:	**100**
Subject Code	:	MCAE08	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT - I

1.	a)	When you use the + operator to concatenate two lists, does it make a copy or a reference of the arguments? Explain with the help of an example.	CO2	(10)
	b)	Develop a Python program that will accept, as input, a series of names and salaries. Usethe name 'End' to mark the end of the sequence of values. After the values have beenentered, print the average salary and the names and salaries of those individuals with thehighest and lowest salaries.	CO1	(10)
2.	a)	Develop a python program that takes two positive integers m and n, and then produces a box of *m*X*n* dimension as shown below. Enter height: 4 Enter width: 5 * * * * * * * * * * * * * *	CO1	(10)
	b)	Develop a script to read n values into a list. Separate the numbers in the list into two new lists, first contains all prime numbers and second contains all non-prime numbers.	CO2	(10)

UNIT – II

3.	a)	Explain keyword arguments, default arguments and variable length arguments with the help of an example each.	CO3	(08)
	b)	Let **a** be the list of values produced by range(1,11) using the function filter and a lambda argument, write an expression that will produce, i. A list of values which are divisible by 3 ii. A list of values which are even.	CO4	(06)
	c)	Develop a program to generate prime numbers in the given range using list comprehension (0, 5).	CO4	(06)
4.	a)	Let a be the list of values produced by range(1, 11). Using the function map and a lambda argument, write an expression that will produce each of the following, i. A list of squares of the values ii. A list of cubes of the values iii. A list where each element is larger by one than the corresponding element in the original list.	CO4	(10)
	b)	Develop a factorial function which returns the factorial of a number. Using the factorial function, develop another function that estimates	CO3	(10)

the value of mathematical constant e using this formula :
e = 1 + 1/1! + 1/2! + 1/3! + 1/4! + 1/5! + ...

UNIT - III

5.	a)	Suppose you are designing the software for an ATM (Automatic Teller Machine). Write at least three different scenarios describing the use of your system. From these create CRC cards to describe the various classes that might be used to implement your design. Walk through your scenarios to make sure that all activity is matched to a class.	CO5	(10)
	b)	What are data attributes and class attributes? Create a python program that will illustrate the fact that class variables are shared among all instances of a class.	CO5	(10)
6.	a)	Create a class *Rectangle*. The constructor for this class should take two numeric arguments, which are the *width* and *height*. Add methods to compute the area and perimeter of the rectangle, as well as methods to that return the height and width. Add a method *isSquare* that returns a Boolean value if the rectangle is a square.	CO5	(12)
	b)	List any 6 regular expression patterns in python and write the meaning of each.	CO8	(08)

UNIT – IV

7.	a)	Develop a simple temperature conversion GUI using *tkinter* that consists of an entry field and two buttons. When button labeled Celsius is clicked, the entry field is converted from Fahrenheit to Celsius, When button labeled Fahrenheit is clicked, the entry field is converted from Celsius to Fahrenheit.	CO9	(08)
	b)	Develop a python program that takes a file name through command line argument and then prints the number of characters, words and lines in the file.	CO6	(08)
	c)	Explain the following Tkinter widgets: i) Text Box ii) Radio Button.	CO9	(04)
8.	a)	Develop a python program that will prompt the user for a file name, read all the lines from the file into a list, sort the list, and then print the lines in sorted order.	CO6	(06)
	b)	What is exception handling? How do you handle exceptions in python? Explain with an example.	CO7	(10)
	c)	How do you bind events in *tkinter* programming?	CO9	(04)

UNIT - V

9.	a)	Explain in detail the Model, View and Template layers of Django architecture.	CO10	(08)
	b)	Develop a Django web application which takes the input from a HTML form and inserts data into the database and display the records.	CO12	(12)
10.	a)	Describe the various steps in developing a web application in Django with a database.	CO11	(10)
	b)	Develop a Django web application which displays the list of employees who belong to a particular department by reading the department from user.	CO12	(10)

****