MCA11

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RAMAIAH Institute of Technology

(Autonomous Institute, Affiliated to VTU)
(Approved by AICTE, New Delhi & Govt. of Karnataka)
Accredited by NBA & NAAC with 'A+' Grade

SEMESTER END EXAMINATIONS – JUNE 2022

Program	:	Master of Computer Applications	**Semester**	:	I
Course Name	:	**Programming with Python**	**Max. Marks**	:	**100**
Course Code	:	MCA11	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT- I

1.	a)	List the operators supported in Python? Describe specifically about identity and membership operator with a suitable example?	CO1	(06)
	b)	Differentiate between lists and tuples in Python. How to create nested lists? Demonstrate how to create and print a 3-dimensional matrix with lists.	CO1	(07)
	c)	Develop a Python program that counts the number of occurrences of a letter in a string, using dictionaries.	CO1	(07)
2.	a)	Demonstrate the usage of pass, continue and break with the help of appropriate example.	CO1	(06)
	b)	Develop a Python code to extract the Even elements indices from the given list.	CO1	(07)
	c)	Develop Python script that takes a list of words and returns the length of the longest one using tuples.	CO1	(07)

UNIT – II

3.	a)	Explain the following arguments to functions in python with examples. (i) Keyword arguments (ii) Default arguments (iii) Variable length arguments.	CO2	(10)
	b)	Explain the scope of local and global variables.	CO2	(05)
	c)	Write short notes on anonymous functions in python.	CO2	(05)
4.	a)	Write a function to display the Fibonacci sequence up to nth term where n is provided by the user.	CO2	(05)
	b)	Let *a* be the list of values produced by *range(1,11)*. Using the function *filter* and a *lamda* argument, write the expression that will produce each of the following. (i) A list of even numbers in ***a*** (ii) A list of values in ***a*** divisible by 3.	CO2	(05)
	c)	Write short notes on the following: (i) Mapping (ii) Filtering (iii) List comprehension.	CO2	(10)

UNIT – III

5.	a)	Explain the basic syntax of class in Python. Show an example defining a class which demonstrates attributes, methods, constructor and destructor.	CO3	(08)
	b)	Demonstrate Multiple Inheritance with Method Overriding.	CO3	(08)
	c)	Demonstrate self and del keyword usage in python giving a suitable example.	CO3	(04)

6.	a)	Demonstrate the usage of getattr() and hasattr() methods with a suitable example.	CO3	(04)
	b)	Develop a python program that will illustrate the fact that class variables are shared among all instances of a class.	CO3	(05)
	c)	Design a Python class called account and implement the functions deposit, withdraw and display balance.	CO3	(07)
	d)	Demonstrate how the concept of data hiding is implemented in python.	CO3	(04)

UNIT – IV

7.	a)	List any five regular expression patterns in python and write the meaning of each.	CO4	(05)
	b)	Develop a script that will prompt the user for a file name, then print all lines from the file that contain the Python comment character #.	CO4	(10)
	c)	List and describe the file open modes in python.	CO4	(05)
8.	a)	Demonstrate match() and search() methods w.r.t regular expressions in python.	CO4	(05)
	b)	Explain user defined exceptions in python with an example.	CO4	(10)
	c)	Develop a script that asks the user for a file name, then prints the number of characters, words and lines in the file.	CO4	(05)

UNIT – V

9.	a)	Illustrate the usage of the following tkinter widgets: i) entry ii) label iii) button iv) messagebox.	CO5	(10)
	b)	Create an HTML form to read bio data of a candidate with fields First name, Last name, Age, Address, Hobbies (checkboxes), Gender (Radio buttons), and submit button to submit form data. On form submission the data should be displayed in proper format. Note: Show necessary python code for CGI.	CO5	(10)
10.	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.	CO5	(10)
	b)	What is CGI? Explain the architecture of CGI. Explain the necessary steps to create a CGI file and execute it.	CO5	(10)

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