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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

SUPPLEMENTARY SEMESTER EXAMINATIONS - NOVEMBER 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)	Explain the significance of break, continue and pass with suitable example.	CO1	(10)
	b)	Develop a python program that reads two integer values n and m from the user, then produces a box that is n wide and m deep, such as the following: Enter a width: 5 Enter a height: 4 @@@@@ @ @ @ @ @@@@@	CO1	(05)
	c)	List and describe any five methods on tuples.	CO1	(05)
2.	a)	How do you create and access dictionaries in Python? Explain the operations *len(), copy(), clear(), items()* on dictionaries.	CO1	(10)
	b)	Demonstrate slicing on strings. Also explain the use of join() and split() string methods with examples.	CO1	(05)
	c)	Illustrate the different types of iterative statements available in Python.	CO1	(05)

UNIT – II

3.	a)	Develop a recursive Python function that recursively computes sum of elements in a list of lists. Sample Input: [1, 2, [3,4], [5,6]] Expected Result: 21.	CO2	(07)
	b)	What is lambda function? What are the characteristics of a lambda function? Give an example.	CO2	(06)
	c)	Develop a Python program that prints the intersection of two lists. (without using list comprehension/sets).	CO2	(07)
4.	a)	Discus the following ways of passing parameters to functions with a suitable example: i. Keyword only parameters ii. Variable length arguments iii. pass by reference and pass by value.	CO2	(08)
	b)	Develop Python function to calculate sum and product of two arguments, return them.	CO2	(06)
	c)	Create a list of even numbers from 1 to 10 using the loop and filter method.	CO2	(06)

UNIT – III

5.	a)	Explain the following concepts in python with example: i) Data hiding ii) Inheritance.	CO3	(10)
	b)	Explain the basic structure of class in python. Also explain the difference between data attributes and class attributes with	CO3	(10)

example.

6.	a)	Define a class BankAccount. The constructor for this class will take one argument i.e. default balance for opening an account. Add methods withdraw, deposit and displayBalance to do respective operations. In the withdraw method check for sufficient balance before withdrawal.	CO3	(10)
	b)	Demonstrate the following concepts w.r.t python: i) Constructor ii) Destructor iii) self iv) del	CO3	(10)

UNIT – IV

7.	a)	Develop regular expressions to match the following patterns, • Email Address • Mobile number • USN.	CO4	(05)
	b)	Develop a Python program to demonstrate user defined exception.	CO4	(05)
	c)	Write a 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.	CO4	(06)
	d)	List and describe different file open modes in python.	CO4	(04)
8.	a)	List any four regular expression patterns in python along with their meaning and example.	CO4	(04)
	b)	Construct a python program to read a text file and display first 5 lines and last five lines.	CO4	(06)
	c)	Discover what exception is produced by each of the following points. Then, for each, write a small example program that illustrates catching the exception using a try statement and continuing with exception after the interrupt. i. Division by zero ii. Opening a file that does not exist iii. Indexing a list with an illegal value iv. Using an improper key with a dictionary v. Passing an improperly formatted expression to the function expr( )	CO4	(10)

UNIT – V

9.	a)	Develop a GUI tkinter application to accept login screen with the following specifications: * Input box for user name and password * Input buttons for login and cancel * check box to remember the login credentials.	CO5	(10)
	b)	Discuss the architecture of CGI and configuration changes to be incorporated in web server to execute python-CGI program.	CO5	(06)
	c)	List any four CGI Environment variables and their purpose.	CO5	(04)
10.	a)	Design a web page that takes name from text box and gender from radio buttons. Upon click on submit button, cgi-python program to display the input data on the new page.	CO5	(10)
	b)	Explain any five tkinter widgets with example.	CO5	(10)

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