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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

EXAMINATIONS SEPTEMBER /OCTOBER 2020

SUPPLEMENTARY SEMESTER / GRADE IMPROVEMENT/ RE –REGISTERED CANDIDATES

Program	:	Master of Computer Applications	**Semester**	:	IV
Course Name	:	**Programming with Python**	**Max. Marks**	:	**100**
Course Code	:	MCA42/MCAE08	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer any one full question from each unit.

UNIT – I

1.	a)	Describe Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators and Bitwise Operators in detail with examples.	CO1	(10)
	b)	List and describe any five functions to operate Tuples.	CO1	(05)
	c)	Explain the use of join() and split() string methods with examples. What does it mean strings are immutable? Explain with an example.	CO1	(05)
2.	a)	Implement a Python Program to reverse a number and also find the number of digits and Sum of digits in the reversed number. Prompt the user for input.	CO1	(07)
	b)	Illustrate break, continue and pass statements in Python.	CO1	(07)
	c)	Demonstrate the creation and operation of dictionaries in Python.	CO1	(06)

UNIT – II

3.	a)	Write a python function that accepts a sentence containing alpha numeric characters and calculates the number of digits, uppercase and lowercase letters. Return the calculated values.	CO2	(08)
	b)	i) Demonstrate scope of the local and global variables. ii) What are DOC strings?	CO2	(06)
	c)	Illustrate ***args** and ****kwargs** parameters in Python programming language with an example.	CO2	(06)
4.	a)	Explain keyword, required and default function parameters with examples.	CO2	(10)
	b)	Write a function to find the factorial of a number using functional programming.	CO2	(05)
	c)	Use list comprehension to create a list of integers which specify the length of each word in a certain sentence, but only if the word is not the word "the". text =”the students of MCA study the programming language python as part of the curriculum”	CO2	(05)

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	(10)
	b)	Write the general syntax of getattr() and hasattr() methods. Also show the usage with an example.	CO3	(06)
	c)	How do you define and use regular expressions in Python? Discuss.	CO3	(04)

6.	a)	Demonstrate the following concepts in python: i) Data Hiding ii) Inheritance iii) Static Members iv) del keyword.	CO3	(14)
	b)	Write a Python program to check the validity of a password given by the user using regular expression. The Password should satisfy the following criteria: i. Contain at least 1 letter between a and z ii. Contain at least 1 number between 0 and 9 iii. Contain at least 1 letter between A and Z iv. Contain at least 1 character from $, #, @ v. Minimum length of password: 6 vi. Maximum length of password: 12.	CO3	(06)

UNIT -IV

7.	a)	Develop a simple currency conversion GUI using *tkinter* that consists of an entry field and two buttons. When button labeled INR is clicked, the entry field is converted from US Dollars to INR, when button labeled Dollars is clicked, the entry field is converted from INR to US Dollars.	CO4	(10)
	b)	What is exception handling? How do you handle exceptions in python? Explain with an example.	CO4	(10)
8.	a)	Design a GUI in python to read firstname, last name, address, hobbies, gender of a person. Display all values on click of submit button.	CO4	(10)
	b)	Explain the need for Pickle module. Write Python program to save dictionary in Python Pickle.	CO4	(05)
	c)	Explain the different methods available for manipulating the text files.	CO4	(05)

UNIT -V

9.	a)	Compare MVC architecture with MVT architecture of Django framework.	CO5	(05)
	b)	Implement the functionality toconnect to the database and read the details of a given doctor from doctor table and Hospital from hospital table. i.e., **read records from Hospital and Doctor Table as per given hospital Id and Doctor Id** and display hospital and doctor information. Implement the functionality to print the table content. Note: Show necessary steps and python code that has to be added by you in different files in Django framework.	CO5	(15)
10.	a)	Explain the functionalities of models, views, templates of Django.	CO5	(05)
	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 using GET method. On form submission, insert the data into ***'candidate'*** table Note: Show necessary steps and python code that has to be added by you in different files in Django framework.	CO5	(15)

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