MCAE08

RAMAIAH
Institute of Technology

(Approved by AICTE, New Delhi & Govt. of Karnataka)

(Autonomous Institute, Affiliated to VTU)
Accredited by NBA & NAAC with 'A' Grade

SUPPLEMENTARY SEMESTER EXAMINATIONS – JULY/AUGUST 2018

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) Demonstrate any four functions of lists with the help of an examples. CO1 (08)
   b) Using for loop, print of table of Celsius/Fahrenheit equivalences. Let c be theCelsius temperatures, ranging from 0 to 100. For each value of c, print the corresponding Fahrenheit temperature. CO1 (06)
   c) Demonstrate any three functions of dictionaries in python with examples. CO1 (06)

2. a) Examine each of the following expressions. Predict what the result would be? Explain what the type is for each expression. If an expression is illegal, explain why? CO1 (10)
   i. 10 / 5
   ii. 5 / 10
   iii. 5.0 / 10
   iv. 10 % 4 + 8 / 4
   v. 3 ** 10 / 3.
   b) Explain what ord() and chr() function is used for. Using the same, Write a function that takes a string input and converts all uppercase letters to lowercase and vise versa. CO1 (10)
   Sample input: I love PyTHon
   Sample output: i LOVE pYthON.

UNIT – II

3. a) Define list comprehension. Explain with an example. CO2 (05)
   b) Explain variable length arguments function with syntax and example. CO2 (05)
   c) Develop a python function to return the number of palindrome words in a line of text. CO2 (10)

4. a) Explain the following concepts in Python. CO2 (08)
       i) Lambda functions ii) keyword arguments.
   b) What are filtering and reduction? Explain with an example. CO2 (08)
   c) Trace function calls and find the value of h(6,8) for the function below CO2 (04)
```
def h(m,n):
        ans = 1
        while (n > 0):
                (ans,n) = (ans*m,n-2)
        return(ans)
```

UNIT- III

5. a) Define the following w.r.t classes in python. Show the code snippets to define/show the usage of each. CO2 (10)
   (i) Constructor (ii) Destructor (iii) getattr (iv) hasattr.
   b) Explain the following concepts in detail: CO2 (10)
   i. Data hiding ii. Inheritance iii. Static members.

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 that simply return the height and width. Add a method is Square that returns a Boolean value if the rectangle is a square.	CO2	(10)
	b)	How do you define regular expressions in python? Write regular expression to match the following patterns: (i) The file names chapa, chapb, chapc, chapx, chapy and chapz. (ii) containing '*msrit'* as an embedded string except at the beginning or end . (iii) the file names that end with at least two digits and don't begin with an alphabet. (iv) the files except '*.py'* extension	CO4	(10)

UNIT- IV

7.	a)	Why is exception handling required? Write a Python program to demonstrate user defined exception.	CO4	(10)
	b)	List the various methods to read and write the file contents and Explain.	CO3	(05)
	c)	Construct a python program to read a text file and display first 5 lines and last five lines.	CO3	(05)
8.	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)	Consider the following file "num_pairs.txt", read data and find the line total and write the line as well as total to a new file.	CO5	(10)

num_pairs.txt

1.3	3.4
2	4.2
-1	1

UNIT- V

9.	a)	Compare and contrast general MVC architecture and MVT architecture of Django framework.	CO5	(06)
	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 POST method. On form submission the data should be displayed in proper format. Note: Show only necessary python code that has to be added by you in different files in Django framework.	CO5	(14)
10.	a)	Show the necessary steps and code to create web page to perform the following operations on Book database. i) Add Book ii) Modify Book data iii) Delete Book iv) Search Book.	CO5	(12)
	b)	Explain the functionalities of models, views, templates of django with an example.	CO5	(08)

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