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RAMAIAH
Institute of Technology

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

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

SEMESTER END EXAMINATIONS – MAY/JUNE 2018

Course & Branch : Master of Computer Applications
Subject : **Programming with Python**
Subject Code : MCAE08

Semester : IV
Max. Marks : **100**
Duration : **3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT- I

1. a) Design a Python program to find the average of best two test scores out of three test scores taken as input. CO1 (05)

   b) Write the evaluation result of the following expressions: CO1 (05)
   i) not "True" ii) – 22 % 5 iii) "99" + 1
   iv) dir("python") v) ['H', 'He', 'Li'] + 'Be'

   c) In what situations, break and continue statements were used? Discuss with examples. CO1 (04)

   d) Store the following data in a list, a tuple, and a dictionary: CO1 (06)

India	91
USA	1
UK	41
Japan	9

2. a) Consider the list scores = [5, 4, 7, 3, 6, 2, 1] and write the python instruction to perform the following operations: CO1 (04)
   i) Insert an element 9 at the beginning of the list.
   ii) Insert an element 8 at the index position 3 of the list.
   iii) Delete an element at the end of the list.
   iv) Delete an element at the index position 3.

   b) Predict the output of the following and justify your answer: CO1 (08)

   i)
```
S=
"Vishweswaraiah"
print(s[4:])
print(s[:5])
```

   ii)
```
str1 = "Bangalore"
str1[1] = "e"
str1[6] = str1[8] = "u"
print(str1)
```

   iii)
```
a = -45
print (--a)
```

   iv)
```
a, b, c = True, False, False
if a or b and c:
    print "MSRIT"
else:
    print "RNSIT"
```

   c) Use the for loop and give example for: CO1 (08)
   i) Processing characters in Strings
   ii) Displaying values and keys of a dictionary
   iii) Looping over List of Lists.

UNIT – II

3.	a)	Write a lambda function for each of the following: i) Take one argument and return true if it is nonzero ii) Take one argument and return true if it is odd iii) Take a list as argument and return sum of the elements of the list	CO2	(06)

	b)	What is the output of the following? Explain.
		`def outer(x):`
		`def inner(y):`
		`return x + y`
		`return inner`
		`x = outer(3)`
		`print x(4)`
			CO2	(04)

	c)	Explain keyword arguments, default arguments and variable length arguments with suitable examples.	CO2	(10)
4.	a)	Explain list comprehension with example.	CO2	(05)
	b)	Explain recursion in python.	CO2	(05)
	c)	Illustrate the following with example: i) DOC strings ii) local and global variables iii) pass by reference and pass by value in python.	CO2	(10)

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.	CO2	(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.	CO2	(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 *is Square* that returns a Boolean value if the rectangle is a square.	CO2	(12)
	b)	List any 6 regular expression patterns in python and write the meaning of each.	CO4	(08)

UNIT- IV

7.	a)	Explain with the help of an example the different functions used with files.	CO3	(10)
	b)	Write a simple currency conversion utility that consists of an entry field and two buttons. When the button labeled Rupee is pressed the entry field is converted from Dollar to Rupee. Conversely, when the button labeled Dollar is pressed the value is converted from Rupee to Dollar.	CO5	(10)
8.	a)	Write a program that asks the user for a file name, then prints the number of characters, words and lines in the file.	CO3	(10)
	b)	Explain exception handling in python in detail with the help of an	CO4	(10)

example.

UNIT- V

9.	a)	Explain MVT architecture of Django framework.	CO5	(06)
	b)	Create an HTML form to readbio data of a candidate with fields First name, Last name, Age, Address, Hobbies (checkboxes), Gender (Radio buttons), and submit button to submit form datausing 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.		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	(20)

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