CSOE01

USN	1	M	S							

RAMAIAH
Institute of Technology

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

MAKEUP EXAMINATIONS – JULY 2019

Course & Branch	:	**B.E. : Common to all branches**	**Semester**	:	**VIII**
Subject	:	**Python Application Programming**	**Max. Marks**	:	**100**
Subject Code	:	**CSOE01**	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT- I

1. a) i) Design and implement a python program that accepts an integer value n and computes the value of n+nn+nnn. — CO1 (08)
   ii) Design and implement a python program to get a new string from a given string where "is" will be added to the front .if the given string begins with "is" then return the string unchanged.
   b) Design and implement a python program to test whether a number is within 100 of 3000 or 4000. — CO1 (06)
   c) List and explain any 3 string built-in methods with an example. — CO1 (06)

2. a) What is debugging? What are the different kind of errors that occur during the execution of the program? — CO1 (06)
   b) i) Write a program that sums a series of positive numbers entered by user, excluding all numbers greater than 200 and less than 100. — CO1 (08)
   ii) Design and implement a program to count the number of characters in a string.
   Sample string:abracadabra
   Expected result:{ 'a'=5,'b'=2,'c'=1,'d'=1.'r'=2}
   c) Differentiate between nested conditionals and chained conditionals with an example each. — CO1 (06)

UNIT- II

3. a) How do you create and access dictionaries in python? Explain the operations len(),copy(),clear(),items() on dictionaries. — CO2 (08)
   b) **1. What is the output of the following?** — CO2 (06)

```
d = {0: 'a', 1: 'b', 2: 'c'}
for x, y in d.items():
print(x, y)
```

i) 0 1 2 ii) a b c iii) 0 a 1 b 2 c iii) none of the mentioned

2. What will be the output?

```
>>>t=(1,2,4,3)
>>>t[1:-1]
```

i) (1, 2) ii) (1, 2, 4) iii) (2, 4) iv) (2, 4, 3)

3. What is the output of the following code?

```
>>> a=(1,2,3,4)
>>> del(a[2])
```

i) a=(1,2,4) ii)a=(1,3,4) iii) a=(3,4))Error as tuple is immutable

4. What will be the output?

```
d = {"john":40, "peter":45}
print(list(d.keys()))
```

i) ["john", "peter"]. ii) ["john":40, "peter":45].
iii) ("john", "peter") iv) ("john":40, "peter":45)

c) i) Write a Python program to remove duplicates from a list. CO2 (06)
ii) Write a Python function that takes two lists and returns True if they have at least one common member.

4. a) Write a Python function that takes a list and returns a new list with unique elements of the first list CO2 (06)
Sample List : [1,2,3,3,3,3,4,5]
Unique List : [1, 2, 3, 4, 5]

b) i) Design and implement a program to count the number of vowels present in a given list of strings using 'in' or 'not in' operator. CO2 (10)
ii) Design and implement a python program to get a string made of the first 2 and the last 2 chars from a given string. If the string length is less than 2 return instead the empty string.

c) **1. What is the output of the following code?** CO2 (04)
a={1:5,2:3,3:4}
a.pop(3)
print(a)
i) {1: 5} ii){1: 5, 2: 3}
ii) Error, syntax error for pop() method iv){1: 5, 3: 4}

2. What is the output of below program?
def cube(x):
return x * x * x
x = cube(3)
print x
i) 9 ii) 3 iii) 27 iv) 30

3. What is the output of the following code?
>>>a,b=6,7
>>>a,b=b,a
>>>a,b
i)(6,7) ii)Invalid syntax iii)(7,6) iv)Nothing is printed

4. What is the output of the following piece of code?
>>> a=(0,1,2,3,4)
>>> b=slice(0,2)
>>> a[b]
i)Invalid syntax for slicing ii)[0,2]. iii)(0,1) iv)(0,2)

UNIT- III

5. a) Design and implement a python program to determine the execution time for binary sort and bubble sort using the time module. CO3 (06)

b) Define namespace, lookup and scope rules in python with an example. CO3 (08)

c) Design and implement a python program to create and read a file; store it in a list of list, with each inner list containing the product name, net weight and the unit price for a product, by name shoppers_list.txt. that contains the name, weight and unit price of the products in supermarket: Wheat flour 1kg 25.00
Rice flour 1kg 40.00 CO3 (06)

6. a) Explain with example the various methods available in the random module. CO3 (06)

b) i) Write a Python program to read a file line by line and store it into a list. CO3 (08)
ii) Write a python program to find the longest words.

c) Write a python program to produce a list of unique element from the input list which contains duplicates of the elements in the list CO3 (06)
Expected output:
Input list: [1,2,3,3,3,3,5,6,9,9]
Output list: [1,2,3,5,6,9]

UNIT- IV

7. a) Illustrate with an example Name Error and Index Error in exception handling. CO4 (06)

   b) i) Design and implement a python class named circle with an attribute radius and two methods named area and perimeter. Compute the area and the perimeter of the circle. CO4 (10)

   ii) Implement a class called country, which represents a country with a name, a population, and an area. Define country with a constructor that has four parameters: country, name, population and its area.

   c) Discuss the need for self as a parameter for the class methods with an example. CO4 (04)

8. a) Compare deep copy and shallow copy with an examples. CO4 (08)

   b) Design and implement a program that accepts two numbers separated by comma and performs a division of two numbers. Include exceptions for the necessary conditions with finally clause. CO4 (06)

   c) Write a Python class to find a pair of elements (indices of the two numbers) from a given array whose sum equals a specific target number. CO4 (06)

UNIT- V

9. a) Explain with an example all the steps in creating, populating and saving changes to the database. CO5 (06)

   b) Design and implement a GUI application which accepts the "name" and "time of the day" as input and displays an appropriate greeting message based on the time of the day. CO5 (06)

   c) Explain the following terms with respect to the databases with an example code for each. i) keys ii) constraints. C05 (08)

10. a) Design and implement a GUI application to find if the input year is a leap year or not. CO5 (10)

    b) CO5 (10)

State	Population	Area
Uttar Pradesh	199,281,477	199,281,477
Maharashtra	112,372,972	307,713 km^2
Bihar	103,804,637	94,163 km^2
Rajasthan	68,621,012	342,239 km^2
Karnataka	61,130,704	191,791 km^2
Tamil Nadu	72,138,958	130,058 km^2

For the above given data Write Python code that does the following:

i. Creates a new database called census.db
ii. Retrieves the populations
iii. Retrieves the provinces that have populations of less than 72 million or greater 110 million
iv. Retrieves the populations of provinces that have a land area greater than 200,000 square kilometers
v. Retrieves the provinces along with their population densities (population divided by land area)

****