CSOE01

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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 – 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. Write a program that sums a series of positive numbers entered by user, excluding all numbers greater than 200 and less than 100. 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}	CO1	(08)
	b)	Explain how break, continue and return statement is used in a python program with an example.	CO1	(06)
	c)	List and explain any 3 string built-in methods in python 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. Design and implement a python program that count the number of decimal digits in positive integer. 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.	CO1	(08)
	c)	Differentiate between chained conditionals and nested conditionals with an example each.	CO1	(06)

UNIT – II

3.	a)	What are paired data? Write a program to show the use of paired data in a for loop in python.	CO2	(06)
	b)	i. Design and implement a python program to count the number of vowels in the given list of strings using 'in' or 'not in' operator. ii. Design and implement a python program to count the number of time the letter "a" appears in a string. Example:" apocalypse" count: 2 times	CO2	(08)
	c)	Describe the slicing operation w.r.t lists. Write small examples to show how a list can be sliced in different ways to generate new lists.	CO2	(06)
4.	a)	i. Design and implement a python program to get a string made of first 3 and the last 3 char from a given string. if the string is less than 3, return instead the empty string. Sample string: "awesome" Result:aweome ii. Illustrate with a simple program, how tuples can be used in grouping data efficiently.	CO2	(06)
	b)	Explain the following w.r.t list with an example. i) Aliasing ii) Cloning iii) Pure functions iv) Modifiers	CO2	(08)
	c)	Design and implement a python program to find the list of words that are no longer than 'n' from a given list of words.	CO2	(06)

UNIT – III

5.	a)	Design and implement a python program to determine the execution time for binary search 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: ragi flour 1kg 25.00 maida flour 1kg 40.00	CO3	(06)
6.	a)	What are modules in python? Explain the math module in python with an example.	CO3	(08)
	b)	Design and implement a python program that sorts two lists and then merges the two lists in ascending order.	CO3	(06)
	c)	What are files? List the two types of files? Write a program to read and write into a binary file.	CO3	(06)

UNIT – IV

7.	a)	Explain the following OOP concepts and the need for their usage with an example: Abstraction and Inheritance.	CO4	(08)
	b)	Design and implement a python program that describes the class Air_baloon with its attributes as p and q values. Create a fleet of 4 Air_baloon and display its p and q positions using suitable methods inside the class.	CO4	(06)
	c)	What are exceptions? What is exception handling? Write a program to implement exceptional handling in python.	CO4	(06)
8.	a)	What are getters and setters? Explain them with an example each.	CO4	(06)
	b)	i. Design and implement a python class named square with constructed by a side and with two methods which will computer the area and the perimeter of the square. ii. Design and implement a class Employee having two methods with the name set() but accepts different number of arguments. Include necessary methods to display the employee details.	CO4	(08)
	c)	What is sameness w.r.t to an object. Explain shallow and deep copying w.r.t to objects.	CO4	(06)

UNIT – V

9.	a)	Explain with an example all the steps in creating, populating and saving changes to the database. List the SQL data types supported by the database.	CO5	(10)
	b)	Explain how joins are used to combine the tables in the database with an example.	CO5	(10)

10. a) Design and implement a GUI application to implement the counter with start stop and reset functionalities. 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)

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