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

MAKEUP EXAMINATIONS – MAY 2022

Program	:	**B.E. : Common to all Programs**	**Semester**	:	**V**
Course Name	:	**Python Application Programming**	**Max. Marks**	:	**100**
Course Code	:	**CSOE01**	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT- I

1.	a)	Bring out the differences between the compiler and an interpreter.	CO1	(04)
	b)	i) Write a python program to find the average of best of two marks out of three marks taken as input. ii) Write a python program to display a string made of the first two and last two characters from a given string. If the string length is less than two, return empty string otherwise display new string.	CO1	(10)
	c)	Explain the find() and split() methods. write a simple example program to demonstrate the use of these methods on strings.	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)	Explain how to create and display Tuples. List the different functions that can be performed on Tuples.	CO2	(07)
	b)	Explain the following w.r.t list with an example: i) Cloning ii) Nested Lists iii) List Membership iv) Slices.	CO2	(07)
	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)
4.	a)	Discuss the following dictionary methods with an example. i) pop() ii) values() iii) items()	CO2	(06)
	b)	Consider the string 'Mississippi'. Write Python code that implements and returns the functionality of histogram using dictionaries for the given string. Also, write the function print_hist() to print the keys and their values in alphabetical order from the values returned by the histogram function.	CO2	(06)
	c)	i. Design and implement a python program to count the number of times the letter "e" appears in a string. ii. Input five integers (+ve and −ve). Write Python code to find the sum of negative numbers, positive numbers and print them. Also, find the average of all the numbers and numbers above average.	CO2	(08)

UNIT – III

5. a) What are modules? Describe the three different ways to import names into the current namespace, and to use them. CO3 (06)
   b) Write a Python program to count the number of lines and words in a text file. CO3 (06)
   c) Write a python program to demonstrate the use of functions in time and math modules. CO3 (08)

6. a) With an example explain how to fetch information from the web in python? CO3 (06)
   b) i)Write a Python program to generate random even integers in a specific numerical range using the random module. CO3 (08)
   ii) Write a Python program to get a single random element from a specified string using the random module.
   c) Write a function that takes a list of integers, and returns the number of primes in the list. CO3 (06)

UNIT – IV

7. a) Define exception. Explain with an example to handle multiple exceptions. CO4 (07)
   b) Write Python code to calculate the sum of two times using pure functions and modifiers. CO4 (07)
   c) What is sameness with respect to an object. Explain shallow and deep copying w.r.t to objects. CO4 (06)

8. a) Explain Polymorphism in Python in detail with examples. CO4 (07)
   b) Write Python code to create a function named move_rectangle()that takes an object Rectangle and two numbers named dx and dy. It should change the location by adding dx to the x coordinate of corner and adding dy to the y coordinate of corner. CO4 (07)
   c) Write Python code that overloads "+" operator, to add two objects of a class. CO4 (06)

UNIT – V

9. a) Design and implement a GUI application to find if the input number is palindrome or not. CO5 (06)
   b) create a database to store the population and land area of the Canadian provinces and territories with their capital according to the census. CO5 (08)

Province/Territory	capital	Population	Land Area
Labrador	St. John's	512930	370501.69
Prince Edward Island	Charlottetown	135294	5684.39
Nova Scotia	Halifax	908007	52917.43
New Brunswick	Fredericton	729498	71355.67
Quebec	Quebec City	7237479	1357743.08
Ontario	Toronto	11410046	907655.59

Write SQL queries that do the following:

i. Retrieve the contents of the table
ii. Retrieve the average capital city population
iii. Retrieve the lowest capital city population

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

10. a) Design and implement a GUI application to accept a 4 digit number only and to print the number in reverse on click of a button. CO5 (06)

b) Create a database to store the population and land area of the Canadian provinces and territories with their capital according to the census CO5 (08)

Province/Territory	capital	Population	Land Area
Labrador	St. John's	512930	370501.69
Prince Edward Island	Charlottetown	135294	5684.39
Nova Scotia	Halifax	908007	52917.43
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Write SQL queries that do the following:
i. Retrieve the contents of the table
ii. Retrieve the lowest capital city population
iii. Retrieve the highest province/territory population.

c) List and explain with an example the SQL data types supported in the database. CO5 (06)

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