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

EXAMINATIONS SEPTEMBER /OCTOBER 2021
SUPPLEMENTARY SEMESTER / GRADE IMPROVEMENT/ RE –REGISTERED CANDIDATES

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

Instructions to the Candidates:

- Answer any five full questions.

1.	a)	Explain the two kinds of programs that process high level language to low level language.	CO1	(04)
	b)	Write a Python Program to check if a given number is a strong number or not using while loop. **Input:** 123=1!+2!+3!=1+2+6=9 **Output:** 123 → is not a strong number. **Input:** 145=1!+4!+5!=1+24+120=145 **Output:** 145 → is a strong number.	CO1	(08)
	c)	It was Raj's first day at school. His teacher Anu asked the students to meet every other student in the class and to introduce about themselves. The teacher asked them to do handshakes when they meet each other. If there are n number of students in the class then, write a python program to find the total number of handshakes made by the students.	CO1	(04)
	d)	Explain the following with an example for each of it: (i) find method (ii) split method	CO1	(04)
2.	a)	Write a python program that asks the user how many coins of various types they have, and then prints the total amount of money in rupees.	CO1	(05)
	b)	List out the features of Python Programming language.	CO1	(05)
	c)	Write a Python program that accepts a hyphen-separated sequence of words as input and prints the words in a hyphen-separated sequence after sorting them alphabetically. Sample Items : green-red-yellow-black-white Expected Result : black-green-red-white-yellow	CO1	(05)
	d)	Explain the following with an example each: (i) logical operations (ii) type conversions.	CO1	(05)
3.	a)	Define a function max_of_three() that takes three numbers as arguments and returns the largest of them using default arguments.	CO2	(05)
	b)	How to create a module and use it in a python program explain with an example.	CO2	(05)
	c)	Design and implement a program to count the number of individual characters in a string. Sample string: "yahoo.com" Result:{'0':3,'y':1,'.':1,'a':1,'h':1,'m':1,'c':1}	CO2	(05)
	d)	Write a Python program to remove duplicates from a list.	CO2	(05)

4.	a)	Define a function sum() and a function multiply() that sums and multiplies respectively all the numbers in a list of numbers. For example, sum([1, 2, 3, 4]) should return 10, and multiply([1, 2, 3, 4]) should return 24 using "VarArgs".	CO2	(06)
	b)	Write a python program which accepts a string from the user, find the frequencies of all the characters in that string and store it in a dictionary with key as the character and its value as the frequency in the given string. Print the resulting dictionary.	CO2	(06)
	c)	Write a program to read details of the student(name as string ,usn as int ,semester as int) in comma separated values from the keyboard and split & typecast the input based on comma delimiter and store it in list before displaying it.	CO2	(08)
5.	a)	Write a python program demonstrating the file operations on a file for create, open, read, write, append methods.	CO3	(08)
	b)	Describe the needs for modules in programming and explain any two modules used in python programming.	CO3	(06)
	c)	Design and implement a program that sorts a given set of numbers using merge sort technique.	CO3	(06)
6.	a)	Design and implement a program that determines the execution time for linear search and binary search using time module.	CO3	(08)
	b)	Describe namespace, scope and lookup rules in python with relevant examples.	CO3	(06)
	c)	Design and implement a program to create and read a file; store it in a list of lists, with each inner list containing the name, atomic number and atomic weight for an element by the name alkaline_metals.txt that contains the name, atomic number, and atomic weight of the alkaline earth metals. Beryllium 4 9.012 Magnesium 12 24.305	CO3	(06)
7.	a)	Describe self-parameters, show how to modify and delete the data members.	CO4	(06)
	b)	Differentiate between shallow copying and deep copy methods used to copy the objects.	CO4	(06)
	c)	With a program show how a user can raise an exception when program detects an error condition.	CO4	(08)
8.	a)	Demonstrate the conversion of an instance to a string with a code snippet.	CO4	(06)
	b)	Create a base class in python called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called triangle and rectangle from the base shape.	CO4	(06)
	c)	With an example, explain pure function in python.	CO4	(08)
9.	a)	Write a GUI application in which a character text is entered, and when the Count button is clicked, the number of vowels and consonants are counted and displayed in the window.	CO5	(07)
	b)	Explain the need for using joins in the databases. With an example explain the steps involved in performing inner joins.	CO5	(06)
	c)	Design and implement a GUI application to accept a string of numbers and displays the sorted list on click of the button named 'sort'.	CO5	(07)

10.	a)	Write a GUI application which accepts user input in Fahrenheit and convert degrees Fahrenheit to degrees Celsius when the button 'convert' is clicked.	CO5	(07)
	b)	Design and implement a menu based text editor that accepts the user text and has options for save the contents and quit the application through a drop down menu.	CO5	(07)
	c)	List all the SQL aggregate functions. Explain with an example any one of the aggregate function.	CO5	(06)

****