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

EXAMINATIONS SEPTEMBER /OCTOBER 2020
SUPPLEMENTARY SEMESTER / GRADE IMPROVEMENT/ RE –REGISTERED CANDIDATES

Program	:	**B.E. : Common to all Programs**	**Semester**	:	**VII/VIII**
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) List the rules to declare a variable in python. Demonstrate at least four different types of variables with an example. CO1 (06)

   b) i) Write a python program to find the average of best of two marks out of three marks taken as input. CO1 (10)

   ii) Write a python program to get 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 return new string.

   c) Explain the find() and split() methods. CO1 (04)

2. a) i) Write a python program to take in the marks of 5 subjects and display the grade using chained conditionals. CO1 (08)

   ii) Write a python program to print the following pattern using nested for loop.

   1
   2 3
   4 5 6
   7 8 9 10
   11 12 13 14

   b) Illustrate the string slicing operation with an example. CO1 (06)

   c) What is the output of the following? CO1 (06)

1.	a = True
	b = False
	c = False
	if a or b and c:
	  print("Welcome to CSE")
	else:
	print("Welcome to ISE")
		2.	for i in range(10):
			  if i == 5:
			  break
			  else:
			  print(i)
			else:
			  print("Here")

3.	string = "my name is python"
	for i in string.split():
	  print (i, end=", ")
		4.	x = 'python'
			for i in range(len(x)):
			  print(i)

5.	print(float(22//3+3/3))	6.	print(2+9*((3*12)-8)/10)

UNIT-II

3.	a)	Explain all the built in methods available for lists. Give examples for each of the methods.	CO2	(08)
	b)	What are pure functions and modifiers with respect to lists in python? Give example for each of the function type.	CO2	(06)
	c)	Write a Python function that takes a number as a parameter and check the number is prime or not.	CO2	(06)
4.	a)	What is aliasing and cloning w.r.t to lists? Explain each of them with an appropriate example.	CO2	(08)
	b)	Write a Python program to check whether a list contains a sublist in it as one of its element.	CO2	(06)
	c)	Write a Python function that checks whether a passed string is palindrome or not.	CO2	(06)

UNIT-III

5.	a)	Explain namespace, scope and lookup rules in python with relevant examples.	CO3	(06)
	b)	What are modules in python? Describe the need for the modules in programming. Explain the random module in python with an example.	CO3	(08)
	c)	Write a Python program to print first 10 lines and last 10 lines in a file.	CO3	(06)
6.	a)	Explain creating your own modules in python with a suitable example.	CO3	(08)
	b)	i) Write a Python program to count the frequency of words in a file. ii) Write a Python program to count the number of lines in a text file.	CO3	(06)
	c)	i) Write a python program to randomly generate a list with 5 numbers, which are divisible by 5 and 7, between 1 and 1000 inclusive. ii) Write a program to randomly generate a list with 5 even numbers between 100 and 200 inclusive.	CO3	(06)

UNIT-IV

7.	a)	What are exceptions? How do you handle an exception in python? Explain the constructs with an example.	CO4	(06)
	b)	Discuss the significance of the "self" keyword, __init__() and __str__() method in Python with a proper example code snippet.	CO4	(06)
	c)	Write a program to create a class called Point with two attributes x and y. Write following functions and demonstrate the working of these functions by creating suitableobjects. i. To read attribute values ii. To display point as an ordered pair iii. To find distance between two points.	CO4	(08)
8.	a)	What is sameness with respect to object? Explain with an example the concept of shallow and deep copy.	CO4	(06)
	b)	Write a Python class named Rectangle constructed by a length and width and a methods to compute the area and perimeter of a rectangle.	CO4	(06)

c) Write a definition for a class named Circle with attributes center and radius, where center is a Point object and radius is a number. CO4 (08)
i) Instantiate a Circle object that represents a circle with its center at (100, 150) and radius 100.
ii) Write a function named point_in_circle that takes a Circle and a Point and returnsTrue if the Point lies in or on the boundary of the circle.
iii) Write a function named rect_in_circle that takes a Circle and a Rectangle andreturns True if the Rectangle lies entirely in or on the boundary of the circle.

UNIT-V

9. a) What is SQL? Explain the following SQL statements: CO5 (06)
i. CREATE TABLE ii. INSERT
iii. SELECT iv. DELETE v. UPDATE

b) 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 (06)

c) 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)
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

Province/Territory	capital	Population	Land Area
Labrador	St. John's	512930	370501.69
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

10. 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) List and explain with an example the SQL data types supported by the database. CO5 (08)

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