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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 – FEBRUARY 2019

Course & Branch	**:**	**B.E : Common to all branches**	**Semester**	**:**	**VII**
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)	Bring out the differences between the compiler and an interpreter. List and explain the three kinds of errors in a program. Give examples.	CO1	(06)
	b)	Write a python program to implement the collatz 3n+1 sequence.	CO1	(06)
	c)	i) Write a Python program to find numbers between 200 and 600 (both included) where each digit of a number is an odd number. The numbers obtained should be printed in a comma-separated sequence ii) Write a Python program that accepts a string and calculate the number of digits and letters. Sample Data : Python 3.2 Expected Output :Letters 6 Digits 2.	CO1	(08)
2.	a)	What are nested conditionals and chained conditionals? Explain with an example each.	CO1	(06)
	b)	Explain the following with an example each: i) short circuit evaluation ii) ** and // operators iii) Built-in Functions.	CO1	(06)

	c)	i)Write a Python program to add 'ing' at the end of a given string (length should be at least 3).If the given string already ends with 'ing' then add 'ly' instead. If the string length of the givenstring is less than 3, leave it unchanged
		Sample String : 'abc' Sample String : 'string'
		Expected Result : 'abcing' Expected Result : 'stringly`
		ii)A string with parentheses is well bracketed if all parentheses are matched: every openingbracket has a matching closing bracket and vice versa. Write a Python function wellbracketed(s) that takes a string s containing parentheses and returns True if s is wellbracketed and False otherwise.Here are some examples to show how your function should work.
		>>> wellbracketed("22")False
		>>> wellbracketed("(a+b)(a-b)")True
			CO1	(08)

UNIT– II

3.	a)	What are functions that produce list? Define side effects.	CO2	(06)
	b)	List and explain all the useful built in methods in lists. Explain with appropriate examples.	CO2	(06)
	c)	i) Write a Python function that takes a list and returns a new list with unique elements of the first list Sample List : [1,2,3,3,3,3,4,5] Unique List : [1, 2, 3, 4, 5] ii) Write a Python function that takes two lists and returns True if they have at least one common member	CO2	(08)

4.	a)	Explain Tuples, dictionary data structure and their built-in methods associates with the data structure with an example.	CO2	(06)
	b)	What is aliasing and cloning w.r.t to lists? Explain each of them with an appropriate example.	CO2	(06)
	c)	i) Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters. Sample String : 'The quick Brown Fox' Expected Output : No. of Upper case characters : 3 No. of Lower case Characters : 13 ii) Write a Python program to remove duplicates from a list.	CO2	(08)

UNIT- III

5.	a)	Explain with example the various methods available in the random module and the time module.	CO3	(06)
	b)	With an example explain how to fetch information from the web in python?	CO3	(06)
	c)	i) Write a program that reads a file and writes out a new file with the lines in reversed order (i.e. the first line in the old file becomes the last one in the new file.) ii)Write a Python program to count number of characters, words and lines in a file.	CO3	(08)
6.	a)	What is a file handler? Discuss its usage in file handling? Explain open() function with syntax and example. What is the need of close() function?	CO3	(06)
	b)	i) Write a Python program to get current time in milliseconds in Python using the time module. ii) Write a Python program to print a string five times, delay three seconds using the time module.	CO3	(06)
	c)	i) Write a Python program to generate a series of unique random numbers using the random module. ii) Write a Python program to get a single random element from a specified string.	CO3	(08)

UNIT- IV

7.	a)	What are exceptions? How do you handle an exception in python? Explain the constructs with an example.	CO4	(06)
	b)	i)Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle ii)Write a Python class which has two methods get_String and print_String. get_String accept a string from the user and print_String print the string in upper case.	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 suitable objects. 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 w.r.t objects? 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 method which will compute the area of a rectangle.	CO4	(06)
	c)	i) Write a Python class to convert a roman numeral to an integer. ii) Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have a area function which can print the area of the shape where Shape's area is 0 by default	CO4	(08)

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 CO5 (08)

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

census
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.

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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