RV College of Engineering

Academic Year 2022-2023 (EVEN Semester)

USN:

Department of Artificial Intelligence and Machine Learning

Course Code:22PL25A
Sem: II

Date: 11.07.23
Duration: 90 Minutes

CIE-I
Introduction Python Programming

Answer all Questions

SL. No		Questions	M	BT	CO
1	a)	Why is python a powerful and popular language? Justify	5	2	1
	b)	Discuss the different comparison operators in python language.	5	1	1
2	a)	Write a python program to find smallest of three numbers using if else/elif statement.	6	3	2
	b)	What are the identity operators in python language. Give examples.	4	1	2
3	a)	Explain all the datatypes supported in python language.	7	2	1
	b)	Write a Python program to find the area of a rectangle.	3	3	2
4	a)	Discuss any five string operators used in python with an example for each.	7	2	3
	b)	Write a program to add two complex numbers.	3	3	3
5	a)	How does break and continue statements work in python language? Give example for each with syntax	4	2	2
	b)	Write a program to swap two integer variables.	6	3	4

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Course Outcome	
CO1	Apply fundamental knowledge of Python programming to solve the engineering problems
CO2	Identify the problems in various application domains and solve them using different concepts of Python programming
CO3	Design a solution using Python programming with societal, environmental, and other concerns by engaging in lifelong learning for emerging technology
CO4	Demonstrate the use of modern tools by exhibiting teamwork and effective communication skills

M-Marks, BT-Blooms Taxonomy Levels, CO-Course Outcomes

	Particulars	CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
Marks Distribution	Max Marks	17	17	10	6	9	16	12	-	-	-

USN:

Department of Artificial Intelligence and Machine Learning

Course Code:22PL25A **Date:**
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CIE-II
Introduction Python Programming

Answer all Questions

SL. No		Questions	M	BT	CO
1	a)	Declare a string a = "Welcome to RVCE". Perform the following operations. i. center (10, *) ii. Capitalize iii. a [0:], a[3:]	6	2	1
	b)	What are global variables and constants in python language. Explain with example.	4	1	1
2	a)	Discuss the below 'tuple' operations with an example for each: i) Concatenation, ii) Iteration, iii) Membership.	6	3	2
	b)	Consider the List B = [1,2,3,4,5], Perform the following operations i. Add value 10 at the 1st position. ii. Remove the value 4 from the list.	4	1	2
3	a)	Consider the dictionary dict = {'Name': 'Zara', 'Age': 7, 'Class': 'First'}. Write the python program to perform the following operations. i. Update the value of age to 21. ii. Add new entry to dict - College as RVCE iii. Clear the all the contents of dictionary	6	2	3
	b)	Write the python program to generate the Fibonacci sequence, using the concept of lists.	4	3	2
4	a)	Explain arbitrary Arguments and arbitrary key word arguments, in functions with example	6	4	3
	b)	What are functions? Explain the uses of creating functions in python language	4	1	2
5	a)	Write a python function to print the sum of all numbers in a given list. list = [8, 2, 3, 0, 7]	6	4	3
	b)	Discuss the different modes in which the file is operated in Python?	4	2	2

Course Outcome	
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M-Marks, BT-Blooms Taxonomy Levels, CO-Course Outcomes

Marks Distribution	Particulars	CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Max Marks	10	18	18	-	12	16	10	12	-	-

Sem: II

Duration: 90 Minutes

IMPROVEMENT TEST
Introduction Python Programming

Answer all Questions

SL. No		Questions	M	BT	CO
1	a)	Create a Python class Person with attributes name and age. Create an object of the class and print the person's details.	5	3	2
	b)	Write a python program to create a base class Shape with a method area. Create two subclasses Circle and Square that inherit from Shape and calculate and print their respective areas.	5	3	1
2	a)	Write python code to create a class Rectangle with attributes width and height. Add a method calculate area to calculate the area of the rectangle.	5	3	1
	b)	Create a class Car with a class variable count that keeps track of the number of cars created. Implement a method to print the count.	5	1	2
3	a)	Explain the concept of public members using relevant code	5	2	3
	b)	Consider a class named Person with a private attribute __age. Define methods to set and get the age. Demonstrate how to access the private attribute using these methods.	5	4	2
4	a)	Create a class Employee with a public attributes emp_name and designation . Instantiate an object and set the employee name. Display the employee name.	5	4	3
	b)	What are the advantages and disadvantages of using Object oriented Programming?	5	1	1
5	a)	What is exception handling in Python? Explain its importance in programming.	5	2	3
	b)	What is the role of the finally block in exception handling? Provide an example.	5	2	2

Course Outcome	
CO1	Apply fundamental knowledge of Python programming to solve the engineering problems
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CO3	Design a solution using Python programming with societal, environmental, and other concerns by engaging in lifelong learning for emerging technology
CO4	Demonstrate the use of modern tools by exhibiting teamwork and effective communication skills

M-Marks, BT-Blooms Taxonomy Levels, CO-Course Outcomes

Marks Distribution	Particulars	CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Max Marks	15	20	15	-	-	-	-	-	-	-

Go, Change the World

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RV COLLEGE OF ENGINEERING®

(An Autonomous Institution affiliated to VTU)

I / II Semester B. E. Examinations October-2023

Common to all programs

INTRODUCTION TO PYTHON PROGRAMMING (ELECTIVE)

Time: 03 Hours ***Maximum Marks: 100***

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer SIX full questions from Part B. In Part B question numbers 2 and 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10. Question number 11 is lab component (compulsory).

PART-A

1	1.1	Python language was developed by _____.	01
	1.2	What is the extension of the Python code?	01
	1.3	Write the value of the Python expression. 8 + 4 % 6	01

	1.4	Write the output for the Python code shown below.
		`i = 1`
		`while True:`
		`  if i%4 == 0;`
		`  break`
		`  print (i)`
		`  i+= 1`
			01

	1.5	Write the output for the Python code shown below:
		`m = 'ijkl'`
		`for i in m:`
		`  print (i.upper( ))`
			01

	1.6	What is the output of this statement `print(pow(3,3))`	01

	1.7	Write the output for the Python code shown below.
		`list1 = [1,2,3,4,5,6,7,8]`
		`list1.pop(4)`
		`  print (list1)`
			01

	1.8	When are exceptions raised in Python language?	01
	1.9	Write the syntax for defining a class in Python.	01

	1.10	Write the output for the below Python code.
		`num = 100`
		`if num > 50:`
		`print("HI")`
		`if(num ≤ 1000:`
		`print("Hello")`
			01

PART-B

2	a	Discuss the features of Python Language and its applications.	07
	b	What are the different datatypes supported in Python language? Give an example for each.	07
3	a	With syntax, explain the working of break, continue and pass statements in loops. Write an example for each.	08
	b	Write a Python program to calculate the sum of given integers until the user enters zero using while loop.	06

		OR	
4	a	Explain the 'elif' statement in Python with syntax. Write a Python program to check if a given year is a leap year or not using 'elif' statement.	08
	b	Write a Python program to generate Fibonacci series for a given 'n' value (0 1 1 2 3 5 8 ..... n).	06
5	a	Discuss the following list operations with an example for each: i) append() ii) extend iii) insert() iv) remove() v) pop ().	10
	b	Write a Python program to print the sum of key value pairs in the dictionary, D = {5:25, 3:15, 4:40, 8:20, 10:60}. Write the output for the same.	04
		OR	
6	a	Declare the string "Welcome to python programming". i) Split the string to print substrings ii) Slice the string to print characters from position 3 to position 10 iii) Print the length of the string.	04
	b	Differentiate between list and tuple. Explain the following 'tuple' operations with an example for each: i) concatenation ii) iteration iii) membership iv) repetition.	10
7	a	Discuss the advantages of using functions in Python language. What are the types of functions in python programming? Write the syntax of declaring a function.	06
	b	Write a Python function that accepts a string and counts the number of upper and lower case letters.	08
		OR	
8	a	Write a Python functions to calculate the factorial of a number.	06
	b	Discuss how Python language supports file handling, also different modes of file handling.	08
9	a	Discuss the various object oriented concepts supported in Python.	07
	b	How is exception handling done in Python language? Discuss different types of exceptions in Python.	07
		OR	
10	a	Write a note on Python classes and Python objects. Give an example for each.	07
	b	Discuss Python methods and Python constructors in brief with example.	07
11	a	Write a Python program to find the height of the ball thrown by a basketball player.	10
	b	Write a Python program to read a paragraph from the user and count the number of words and frequency of words appearing and search for the specific word.	10