RV College of Engineering®

Go, Change the World

Academic Year 2024-25 (ODD Semester)

USN | 1 | R | V | | | | | | | |

Department of Artificial Intelligence and Machine Learning

Introduction to Python Programming

Course Code : AI115AIA

Semester : I

Max Marks : 50

Date : 13/12/2024

Time : 10:00 – 11:30AM

Duration : 90 Mins

Q. No		CIE 2 Questions	M	BT	CO
1	a)	Explain the following statements in Python with examples: • `break` • `continue` • `pass`	5	2	1
	b)	Write a Python program to calculate the sum of all odd numbers in a given list. (Hint: N = 50, using for loop)	5	2	1
2	a)	Write Python code to demonstrate the following operations on a list: • Append an element • Remove an element • Sort the list • Find the index of an element	5	2	2
	b)	Write a python program to check the validity of password input by users. (check for valid length, lower case, upper case, has digits, has special characters)	5	3	3
3	a)	Write a python program to check if the given string is a palindrome. (use for loop)	5	3	3
	b)	Write a Python program to check if a list contains a specific element. If found, stop searching and print 'Element found!', otherwise print 'Element not found.'	5	2	3
4	a)	Write Python code to demonstrate the following operations on a tuple: • Access specific elements by index • Check if an element exists in the tuple • Convert the tuple into a list	5	3	2
	b)	Write a Python program to iterate through a dictionary and print all key-value pairs where the value is greater than or equal to 50.	5	2	2
5	a)	Write Python code to perform the following operations on a dictionary: • Add a new key-value pair • Update the value of an existing key • Print all keys and values in the dictionary • Delete a key-value pair	5	4	2
	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.	5	3	3

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	20	20	-	-	25	20	05	-	-

Course Outcomes: After completing the course, the students will be able to	
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

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Department of Artificial Intelligence and Machine Learning

Introduction to Python Programming

Course Code : AI115AIA
Semester : I
Max Marks : 50

Date : 5/11/2024
Time : 10:00 – 11:30AM
Duration : 90 Mins

Q. No		Questions	M	BT	CO
2	a)	Discuss any five key characteristics of Python Programming Language.	5	2	1
	b)	Demonstrate the various string handling functions available in Python.	5	2	1
3	a)	Explain Type Conversion in Python.	5	2	1
	b)	Write a Python program to find the largest prime factor of a given number.	5	3	1
4	a)	With an example illustrate any 3 Augmented Assignment Operators and how these are helpful in programming	5	3	2
	b)	Write a Python program to read input the heights of three family members from the user and calculate the average height. If the average height is over 5.5 feet, print "Above average height"; otherwise, print "Average height or below."	5	3	2
5	a)	Write a Python program to create Simple Calculator using elif statements.	5	3	1
	b)	Explain the guidelines for creating effective variable names in Python?	5	2	1
6	a)	Illustrate the use of Escaping sequences with the strings.	5	3	1
	b)	Write a Python program to generate the following sequence 0 1 1 2 3 5 8 13 ..... N using while loop.	5	3	1

M-Marks, BT-Blooms

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

Marks Distribution	Particulars	CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Max Marks	40	10	-	-	-	20	30	-	-	-

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USN | 1 | R | V | 2 | 4 | C | S | 2 | 5 | 4 |

RV COLLEGE OF ENGINEERING®

(An Autonomous Institution affiliated to VTU)

I Semester B. E. Regular / Supplementary Examinations Feb/Mar-2025

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 number 2 and 11 are compulsory. Answer any one full question from 3 and 4, 5 and 6, 7 and 8 & 9 and 10.

PART A

			M	BT	CO
1	1.1	Identify the output of the following statement? $X = "RVCE"$ $Print(x**3)$	01	1	1
	1.2	What is the result of the expression $10 \ll 1$?	01	1	2
	1.3	Compare / and // operators in python.	01	2	2
	1.4	Identify the type of Exception generated by the following code $list = [10, 20, 30, 40, 50]$ $print(list[5])$	01	2	1
	1.5	Write an example for Name Error Exception in Python?	01	2	2
	1.6	What is the output of following code: $thislist = ["APPLE", "ORANGE", "CHERRY"]$ $print(thislist[-1])$	01	3	1
	1.7	Write an instruction to delete *'YEAR'* from given dictionary. $thisdict = \{$ $"brand": "Ford",$ $"model": "Mustang"$ $"year": 1964$ $\}$ $print(thisdict)$	01	3	3
	1.8	What is the output of the following code? $txt = "Hello, welcome\ to\ my\ world."$ $x = txt.index("welcome")$ $print(x)$	01	2	3
	1.9	Give an example of *INSERT*() and Append () function for the list.	01	2	2
	1.10	What will be the output of below Python code? $str1 = "Information"$ $Print(str1[2:8]$	01	3	2

PART B

2	a	Why is python a powerful and popular language? Justify.	07	2	1
	b	Accept the String from the User and illustrate any 6 String Operations.	07	3	1
3	a	Write a program to generate the following sequence. $0\ 1\ 1\ 2\ 3\ 5\ 8\ 13 \ldots\ldots N$	07	3	3
	b	Write a program to create Simple Calculator using elif statements.	07	3	3
		OR			

4	a	With syntax, explain the working of break, continue and pass-statements. Write an example for each.	07	3	1
	b	Discuss the usage of Bitwise Operators.	07	3	3
5	a	Discuss the below 'tuple' operations with an example for each: i) concatenation ii) iteration iii) membership iv) repetition	07	3	3
	b	Write a Python program to find the factorial of the given number.	07	3	3
		OR			
6	a	Write a program to create a dictionary with whole integer numbers as values of dictionary and fetch only even values from a given dictionary using for loop.	07	3	2
	b	Given the string "Accountability", apply the suitable inbuilt method to do the following operations and write proper python statements their respective outputs. i) Check whether the string is in title case ii) Extract the substring 'ability' using negative indexing iii) Check whether the string ends with *'ab'* or *'ty'*	07	2	2
7	a	Discuss the concept of Global variable and Arbitrary Keyboard Arguments in Python.	07	3	2
	b	Discuss Try with else clause in Exception handling with example?	07	3	2
		OR			
8	a	Explain arbitrary Arguments and arbitrary key word arguments, in functions with example.	07	1	4
	b	What is the role of the finally block in exception handling? Provide an example.	07	1	4
9	a	Write python code to create a class Rectangle with attributes width the height. Add a method calculate area to calculate the area of the rectangle.	07	2	4
	b	Write a program to illustrate the inheritance in python.	07	3	2
		OR			
10	a	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.	07	2	1
	b	Discuss Static and Class Methods.	07	3	4
		Laboratory Component			
11	a	Write a program to Implement Set and Tuple operations.	10	3	4
	b	Write a program to Read the paragraph from the user, and count the number of words, frequency of words and search for specific word.	10	3	4

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Semester : I
Max Marks : 50

Date : 06/01/2025
Time : 10:00 – 11:30AM
Duration : 90 Mins

Improvement CIE

Q. No		Questions	M	BT	CO
1	a)	Discuss the significance of keyword and positional arguments in Python functions. Write a program to demonstrate their use.	5	2	1
	b)	What are Python methods, how they are invoked, explain with examples?	5	1	1
2	a)	Write a program to demonstrate handling multiple exceptions, such as ValueError and FileNotFoundError.	5	3	3
	b)	Discuss class methods and static methods.	5	2	1
3	a)	What is constructor? Discuss the types of constructors.	5	2	2
	b)	Discuss the different Access Modifiers in Python with an example.	5	2	2
4	a)	Write a Python script to: • Create a text file named "my_file.txt" with sample content. • Capitalize the first letter of every word. Display the total number of vowels and consonants in the file.	5	3	3
	b)	What is Encapsulation in python? Summarize with an example.	5	2	2
5	a)	A hotel management system needs a program to calculate the total bill for customers. The program should: • Take item names, quantities, and prices as parameters. • Use default parameters for service charges (e.g., 5%). • Allow discounts using keyword arguments. Write a Python program demonstrating the above and explain how default parameters and keyword arguments are used.	5	3	3
	b)	Discuss the concept of Polymorphism with Inheritance.	5	2	2

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Marks Distribution	Particulars	CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Max Marks	15	20	15	-	5	30	15		-	-

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