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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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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Department of Artificial Intelligence and Machine Learning

Introduction to Python Programming

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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

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	-	5	30	15		-	-

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