GALGOTIAS UNIVERSITY

ADMISSION NUMBER

School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem IV - R1UC405C - E2UC401C - Programming in Python

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Write a function called greet_user that takes a parameter name with a default value of "Guest." The function should print a personalized greeting using the provided name. Provide an example of calling the function without explicitly passing the name parameter.	K1(2)
2)	Differentiate between write() and writelines() with example.	K2(4)
3)	Compare the use of the pop() method and the fromkeys() method in manipulating Python dictionaries. Evaluate the scenarios where each method is most effective and provide examples to demonstrate their applications.	K2(6)
4)	Write a Python program to manage a shopping list. The list initially contains items, and you need to implement various functions using built-in methods to manipulate the list. Requirements: a. Initialization (2 marks): Initialize a list named shopping_list with at least 5 items. b. Function Implementation (3 marks): Implement a function named modify_shopping_list that: - Takes parameters for the action to be performed (add, remove, replace) and the item involved. - Uses appropriate list methods to apply the specified action on the shopping_list. - Returns the modified list. c. Example Usage (2 marks): Apply the modify_shopping_list function by calling it with different actions and items, and display the applied modifications. Evaluation Criteria: Proper initialization of the list (2 marks) Correct implementation of the modify_shopping_list function using built-in methods (3 marks) Effective demonstration of applying the function's logic with different actions and items (2 marks)	K3(9)
5)	How Generatorss are different form functions in Python? Write a Python program to find all of the factors for a positive integer. using	K3(9)

Generators concept.

6)	Consider the average heights and weights of children aged 8 to 16 stored in the following two lists: height = [121.9,124.5,129.5,134.6,139.7,147.3, 152.4, 157.5,162.6] weight= [19.7,21.3,23.5,25.9,28.5,32.1,35.7,39.6, 43.2]. Draw a plot for the following:- The x-axis will represent weight, the y-axis will represent the height, the x-axis label should be “Weight in kg”, the y-axis label should be “Height in cm”, The color of the line should be green, Use * as a marker, Marker size as 10, The title of the chart should be “Average weight concerning average height”, Line style should be dashed, Linewidth should be 4.	K5(10)
7)	Consider a file C:\Python\files_demos\test.txt. Use the seek () method and write Python statements to move the cursor at the start of file, end of file , and at 25th charecter of the file. show output.	K4(12)
8)	a. Initialization (3 marks): Initialize a list named product_catalog with at least five dictionaries, each representing a product's information. b. Function Implementation (12 marks): Implement a function named evaluate_products that: - Takes the product_catalog list as a parameter. - Uses the index() method to find the index of the product with the highest customer rating. - Uses the cmp() method (consider using a lambda function) to compare the prices of two products. - Uses the max() and min() functions to find the product with the highest and lowest prices, respectively. - Returns a tuple containing the names of the top-rated and lowest-priced products.	K5(15)
9)	Explain different ways of creating Data Frames in Panda? Characterize the Data Frames in Pandas?	K5(15)
10)	(a) Write a Python program that generates a specific pattern using nested for loops. The program should utilize the break and continue statements for more control over the pattern generation [9] 1 2 3 4 5 6 7 8 9 (b) Write a Python program that prompts the user to enter a positive integer and checks whether the given number is a prime number or not. Use a for loop to iterate over possible divisors [9].	K6(18)