PAPER ID-411076

Roll No:

BTECH
(SEM IV) THEORY EXAMINATION 2023-24
PYTHON PROGRAMMING

TIME: 3 HRS   **M.MARKS: 70**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x 7 = 14**

a.	Give difference between = = and **is** operator.
b.	How we print the character of a given ASCII value in Python?
c.	Can you use else with a for loop? If so, when is it executed?
d.	What will be the output of the following Python code? l= [1, 0, 0, 2, ' hi', ' ', []] print(list(filter(bool, l)))
e.	Describe the purpose of the split() method in string manipulation.
f.	What does the readline() function return when it reaches the end of a file?
g.	Which function is used to create identity matrix in NumPy?

SECTION B

2. **Attempt any *three* of the following:**   **7 x 3 = 21**

a.	Explain the concept of dynamic typing in Python with an example.
b.	Explain how to define a list in Python. Write a Python program to remove duplicates from a list and print the resulting list.
c.	Explain the concept of functions in Python. Write a function that takes a list of numbers and returns the sum of all the numbers in the list.
d.	Write a Python program to read a file named "ABC.txt" and count the number of lines, words, and characters in the file.
e.	Explain the basic usage of matplotlib for plotting graphs. Write a Python program to plot a simple line graph showing the relationship between x = [1, 2, 3, 4, 5] and y = [1, 4, 9, 16, 25].

SECTION C

3. **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Explain for and while loops used in Python with appropriate example.
(b)	Write a Python Program to find the LCM of two numbers.

4. **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Write a program takes two strings and checks common letters in both the strings. Enter first string: Hari Enter second string: Hale The common letters are: H a
(b)	Write a Python Program to find the sum all the items in a dictionary. For example if d={'A':100,'B':540,'C':239}then output should be 879.

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5.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Explain the concept of a set in Python and its characteristics. How elements are added or removed in set.
(b)	Explain how lambda functions can be used within a list comprehension. Write a Python program that uses a lambda function within a list comprehension to convert a list of temperatures in Celsius to Fahrenheit.

6.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Explain different file opening modes also write a Python Program to read a file and capitalize the first letter of every word in the file.
(b)	What do you mean by generators in Python? How it is created in Python?

7.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Describe how to generate random numbers using NumPy. Write a Python program to create an array of 5 random integers between 10 and 50.
(b)	Explain the concept of DataFrame in pandas. Write a Python program to create a DataFrame from a dictionary and print it.