



PAPER ID-411076

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Subject Code: BCC402Roll No:

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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? <code>l= [1, 0, 0, 2, 'hi', '', {}] print(list(filter(bool, l))</code>
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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[illegible]

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5. Attempt any *one* part of the following:

$$7 \times 1 = 7$$

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|-----|--|
| (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:

 $7 \times 1 = 7$

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|-----|--|
| (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? |
- Attempt any one part of the following

7. Attempt any *one* part of the following:

$$7 \times 1 = 7$$

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|-----|--|
| (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. |