Printed Pa	ges: 02		Sub Code: KNC-302												
Paper Id:	233077	Roll No.													

B.TECH. (SEM III) THEORY EXAMINATION 2022-23 PYTHON PROGRAMMING

Time: 3 Hours Total Marks: 50

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

Attempt all questions in brief. 1.

1x10 = 10

- Explain the Programming Cycle for Python in detail. (a)
- Describe the concept of List Slicing with a suitable example. (b)
- Show the way to import the module in python. (c)
- Differentiate between Python Arrays and lists? (d)
- Define floor division with an example. (e)
- Explain the difference between 'append' and 'extend' in Python? (f)
- (g) What is a dictionary in Python?
- 177.55.242.732 What is object-oriented programming (OOP) in Python? Give an example. (h)
- What will be the output of the following python code (i)

def count1(s): vowels = "AEIOUaeiou" count = 0for c in s: if c in vowels: count += 1return count print(count1('I love India'))

What will be the output of the following code? (j) list1 = ['M', 'o', 'n', 'k', 'y']print("@".join(list1))

SECTION

2. Attempt any three of the following:

5x3 = 15

- (a) Demonstrate five different built in functions used in the string. Write a program to check whether a string is a palindrome or not.
- (b) Explain the following loops with a flow diagram, syntax, and suitable examples.
 - I) For
- II) while
- Explain the continue, break, and pass statements with a suitable example. (c)
- (d) Develop a program to calculate the reverse of any entered number.
- Explain the list Comprehension with any suitable example. (e)

SECTION C

3.	Attempt	anv	one	nart	of 1	he	follo	wing:

5x1 = 5

- (a) Illustrate Unpacking Sequences, Mutable Sequences, and List comprehension with examples.
- (b) Explain the lambda function. How it is helpful in the higher order function. Explain map() function with a suitable example.

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

5x1 = 5

- (a) Discuss the different types of argument-passing methods in python. Explain the variable length argument with any suitable example.
- (b) Write short notes on the following with a suitable example
 I) Encapsulation II) Inheritance

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

5x1 = 5

- (a) Demonstrate the file handling procedure in detail. Write a python code to create a file with 'P.txt' name and write your name and father's name in this file and then read this file to print it.
- (b) Demonstrate the 'Sieve of Eratosthenes' theorem and write the python function to print prime numbers between 1 to 100.

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

5x1 = 5

- (a) Develop and write the python code of selection sort to sort 41,65,43,91,12,14,62 elements. Also, explain its complexity.
- (b) Explain Binary search with its python code and complexity.

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

5x1 = 5

- (a) Explain the importance of Exception handling in any object-oriented programming language. Explain try exceptions and finally block with any suitable example.
- (b) Summarize the 'Tower of Hanoi' puzzle and write its recursive function to implement it.