Enrolment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
M.SC INTEGRATED - SEMESTER - VIII EXAMINATION - SUMMER 2025

Subject Code: 1380303　　　　　　　　　　　**Date: 14-05-2025**
Subject Name: Python Programming
Time:10:30 AM TO 01:00 PM　　　　　　　　**Total Marks: 70**

Instructions
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

		Marks
Q.1 (a)	Explain the concept of specification with a suitable example.	**03**
(b)	What is dictionary in Python? Explain any four built-in dictionary methods with example.	**04**
(c)	Write a Python program to count words, characters and spaces from text file.	**07**
Q.2 (a)	"List is mutable." - Justify with suitable example.	**03**
(b)	Explain List comprehension with an example.	**04**
(c)	Write a Python program to generate list of n fibonacci numbers.	**07**

OR

(c)	Write a Python program to search a specific value from a given list of values using linear search method.	**07**
Q.3 (a)	Briefly describe the methods of regular expression.	**03**
(b)	Explain different types of comments in python.	**04**
(c)	Develop chat application using Multithreading in Python.	**07**

OR

(a)	Differentiate between List and Tuple in Python.	**03**
(b)	Explain Indexing and Slicing operation for string manipulation with example in python.	**04**
(c)	Write a python program to read line by line from a given files file1 & file2 and write into file3.	**07**
Q.4 (a)	What is the purpose of a port scanner in penetration testing?	**03**
(b)	Describe how an SSH botnet can be created using Python. What are its components?	**04**
(c)	Which are the different ways of creation of threads? Explain each with an example.	**07**

OR

(a)	Give difference between black-box and glass-box testing.	**03**
(b)	How can regular expressions be used to extract email addresses from a log file?	**04**
(c)	Create a Python script using regex to find and mask credit card numbers in a text file.	**07**
Q.5 (a)	What is PyGeoIP? How is it useful in network analysis?	**03**
(b)	Describe a method to recover deleted items from the recycle bin using Python.	**04**
(c)	Discuss the Pentagon's Dilemma in the context of cyber warfare and traffic surveillance.	**07**

OR

(a)	What is the purpose of setting up a wireless attack environment?	**03**
(b)	Discuss how wireless traffic can be captured and analyzed using Python.	**04**
(c)	Describe a forensic investigation scenario where parsing application artifacts provided crucial evidence.	**07**

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