

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 5 – EXAMINATION – SUMMER 2026

Subject Code: 3154702

Date: 09/06/2026

Subject Name: Python Programming Fundamentals

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1**
- (a)** Differentiate between C and Python. **03**
 - (b)** What is python? List out features of python. **04**
 - (c)** What is MicroPython, and why is it a popular choice for embedded systems? Explain the key features that make it suitable for microcontrollers. **07**

- Q.2**
- (a)** What is tuple? Differentiate between list and tuple. **03**
 - (b)** Create a python program that takes user input for two numbers and performs basic arithmetic operations(addition, subtraction, multiplication and division) **04**
 - (c)** Write a program to find sum of all Odd and Even numbers up to a number specified by the user. **07**

OR

- Q.2**
- (c)** Write python program to print the identity matrix of size N, where N is user input. **07**
- Q.3**
- (a)** Differentiate between python and Micropython **03**
 - (b)** Discuss the steps of Installation of Micro Python on Hardware **04**
 - (c)** Write MicroPython program to blink LED at 1 sec on GPIO pin. **07**

OR

- Q.3**
- (a)** State different softwares available to work with micropython. List microcontroller boards which support micropython programming **03**
 - (b)** State advantages and disadvantages of Micropython **04**
 - (c)** Discuss unique features of micro python. How it is used to do programming for GPIO device? **07**

- Q.4**
- (a)** Differentiate between python tuple and set **03**
 - (b)** Describe the purpose of assignment operators in Python. Provide examples of simple assignment (=) and compound assignment (+ =, - =, etc.) operators. **04**
 - (c)** What is Data Type? Explain various data types used in Python. **07**

OR

- Q.4**
- (a)** What is the difference between global variable and local variable? **03**
 - (b)** Explain different methods to iterate for loop with dictionary **04**
 - (c)** What is the use of continue and pass statements explain it with suitable example? **07**

Q.5

- | | | |
|------------|--|-----------|
| (a) | What is the purpose of data plotting in Python? How can you use libraries like Matplotlib to create various types of plots and charts? | 03 |
| (b) | Write a python code to create the list of 10 numbers and display only positive elements from the lists and display sum of positive elements of the list. | 04 |
| (c) | Describe string operations in Python, including string concatenation, substring extraction, and string formatting. | 07 |

OR

- | | | |
|------------|--|-----------|
| Q.5 | (a) What are the logical operators in Python (and, or, not)? How are they used in conditional expressions to combine multiple conditions? | 03 |
| | (b) Write a Python program that will accept the base and height of a triangle and compute the area. | 04 |
| | (c) What is the purpose of defining custom functions in Python, and how do they help in code organization and reusability? | 07 |
