

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 7 – EXAMINATION – SUMMER 2026

Subject Code: 3171716

Date: 08/06/2026

Subject Name: Python For Engineers

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) What are the key features of Python? **03**
 - (b) Give the difference between: C Language and Python Language. **04**
 - (c) Explain with examples of at least five built-in string methods (upper, lower, split, join, replace) along with concatenation, slicing, and formatting. **07**
- Q.2**
- (a) Discuss List with example. Discuss Insert, Append and Pop method in list. **03**
 - (b) Discuss various types of comparison operators in python. **04**
 - (c) Explain while and for loop in Python with example. **07**
- OR
- Q.2**
- (c) Distinguish between break, continue, and pass statements with examples. **07**
- Q.3**
- (a) Write a Python function to check whether a given number is prime or not. The function should return True/False **03**
 - (b) Give the comparison between: List, Set, Tuple and Dictionary. **04**
 - (c) Write a Python program that takes the body temperature of a patient in Fahrenheit as input. **07**
 - Convert the temperature from Fahrenheit to Celsius.
 - Based on the Fahrenheit value, determine the patient's condition using the following rules:
 - Less than 95°F → **“Hypothermia”**
 - Between 97°F and 99°F → **“Normal”**
 - Between 100°F and 102.9°F → **“Fever”**
 - 103°F or higher → **“High Fever”**

Display the temperature in both Fahrenheit and Celsius, along with the diagnosis.

OR

- Q.3**
- (a) Difference between built-in function and user-defined function. **03**
 - (b) Give the difference between global and local variable. **04**
 - (c) Write a Python program to calculate the factorial of a number using recursion. **07**
- Q.4**
- (a) What is exception handling in Python? Explain try and except block with an example. **03**
 - (b) Explain default arguments and keyword arguments in Python functions with suitable examples. **04**

- (c) Write a Python program to read a text file, count the number of lines, words, and characters. Also handle the exception if the file is not found. **07**

OR

- Q.4** (a) What are modules in Python? How to import a module? **03**
(b) Write a Python program to check for palindrome string (i.e. RACECAR). **04**
(c) Write a program to plot a 2D line graph using matplotlib. **07**

- Q.5** (a) Discuss unique features of micro python. **03**
(b) List various IDEs available for MicroPython programming. **04**
(c) Compare Arduino IDE with MicroPython, and highlight the advantages of using MicroPython. **07**

OR

- Q.5** (a) Write a MicroPython program to blink an LED on GPIO pin 23 of ESP32, turning it ON and OFF continuously for 10 seconds. **03**
(b) Discuss steps of installation of MicroPython on hardware. **04**
(c) Explain the differences between MicroPython and standard Python. **07**
