Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V EXAMINATION – WINTER 2025

Subject Code:3151108 Date:17-11-2025

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. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	Write a Python Program to check whether a given number is a palindrome or not.	**03**
	(b)	Provide a brief explanation of bitwise AND, OR, and XOR operators.	**04**
	(c)	Explain the difference between a list and a tuple in Python. Provide suitable example for it.	**07**
Q.2	**(a)**	How does the operator // differ from / in Python? Explain with the help of suitable example.	**03**
	(b)	Write a Python Program to Return the Length of the Longest Word from the given list of words.	**04**
	(c)	Explain assignment operator and arithmetic operator in Python.	**07**
		OR	
	(c)	List and briefly explain built-in data types in Python.	**07**
Q.3	**(a)**	How does the "else" statement differ from the "elif" statement? Explain with the help of suitable example.	**03**
	(b)	How does "continue" differ from "break" in terms of loop control? Explain with example.	**04**
	(c)	Write a Python Program to print the largest even and largest odd number in a list.	**07**
		OR	
Q.3	**(a)**	Explain use of break statement in side while loop with the help of suitable example.	**03**
	(b)	How can you use a "for" loop to iterate over the keys of a dictionary in Python?	**04**
	(c)	Write a Python Program to print the sum of negative numbers, positive even numbers and positive odd numbers in a given list.(assume suitable List)	**07**
Q.4	**(a)**	Describe the use of following built-in methods for the dictionary in python. clear(), keys(), get().	**03**
	(b)	What is module in python? Give examples of any two external Python modules and explain their use.	**04**
	(c)	Explain what is an exception in Python. Provide an example of a common built-in exception in Python.	**07**
		OR	
Q.4	**(a)**	Describe the use of following built-in methods for the list in python. append(), pop(), remove()	**03**
	(b)	Write a simple custom function in Python that takes two parameters and returns their sum.	**04**
	(c)	Explain the concept of variable scope in Python. Provide an example of a local variable and a global variable in Python.	**07**

Q.5	**(a)**	Explain the steps involved in installing MicroPython on a microcontroller or development board.	**03**
	(b)	Explain file exception handling. What are the reasons for file exceptions?	**04**
	(c)	With the help of suitable example explain reading and writing data to CSV file in python.	**07**

OR

Q.5	**(a)**	Explain the role of MicroPython in Internet of Things (IoT) applications.	**03**
	(b)	What is MicroPython, and how does it differ from the standard Python language?	**04**
	(c)	List and briefly MicroPython libraries that are commonly used in embedded systems.	**07**

Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2024

Subject Code:3151108 Date:25-11-2024

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. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	List the advantage and disadvantage of python.	**03**
	(b)	Differentiate between List and Tuple.	**04**
	(c)	Demonstrate Membership operators and identity operators with suitable examples.	**07**
Q.2	**(a)**	What are negative indexes and why are they used?	**03**
	(b)	Write a python program to check if a string is palindrome or not.	**04**
	(c)	Write a Python program to generate pyramid pattern as given below. * * * * * * * * * *	**07**
		OR	
	(c)	Explain while loop in python. How to create infinite while loop? How to break infinite while loop in certain condition? Explain with example.	**07**
Q.3	**(a)**	Write a Python function to sum all the numbers in a list.	**03**
	(b)	Discuss global, local and nonlocal variable in detail.	**04**
	(c)	Develop python program to find maximum, minimum and average of given numbers using user define function.	**07**
		OR	
Q.3	**(a)**	What is a function? Mention the type of function and use.	**03**
	(b)	Describe with example: Module in python	**04**
	(c)	Write a python function to convert string into upper case and find length of string. String will be passed to function.	**07**
Q.4	**(a)**	Describe range function with example.	**03**
	(b)	Enlist all file processing modes supported in Python.	**04**
	(c)	What is an exception? Explain about the different types of Exceptions in Python	**07**
		OR	
Q.4	**(a)**	List and explain in brief different types of errors occurred in Python.	**03**
	(b)	Develop python program to create csv file that contain five entries along with header (serial number, name, birth_date and city).	**04**
	(c)	Explain the different methods available for manipulating the CSV files in python.	**07**
Q.5	**(a)**	What is micro python? Discuss unique features of micro python.	**03**
	(b)	List different features available in Node MCU 8266 controller.	**04**

	(c)	Write MicroPython program to read proximity sensor connected at Pin1, blink the LED if sensing is detected.	**07**

OR

Q.5	**(a)**	Enlist various IDE available to carry out programing in MicroPython.	**03**
	(b)	Describe merits and demerits of Micropython over python.	**04**
	(c)	Develop program in Micropython to send digital data on GPIO pin of Micropython supported board and blink LED connected to it.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2023

Subject Code:3151108 Date:05-12-2023

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.**
   Simple and non-programmable scientific calculators are allowed.

			MARKS
Q.1	**(a)**	Describe membership operator and identity operator with example.	**03**
	(b)	Write Python program to find sum of first N numbers using while loop. (Take N as user input)	**04**
	(c)	Differentiate List, Tuple, Set and Dictionary.	**07**
Q.2	**(a)**	Describe following list methods with example. (1) append( ) (2) insert( ) (3) discard( )	**03**
	(b)	Describe for loop with example.	**04**
	(c)	Write Python code to print following pattern using nested loop. 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 Take Number of row as user input.	**07**
		OR	
	(c)	Write Python code to find determinant of 3x3 Matrix. Enter 9 data run time.	**07**
Q.3	**(a)**	Describe python tuple with example. Describe any two built-in tuple methods	**03**
	(b)	Describe filter method/function available in python with example.	**04**
	(c)	Write a python program to read marks of students from **"student_marks.csv".** Find average, maximum, and minimum marks from data. (File contains 100 records)	**07**
		OR	
Q.3	**(a)**	Describe different methods to make dictionary variable.	**03**
	(b)	Enlist different modes of opening file. Describe any three method with example	**04**
	(c)	Write a program to print 100 fibonacci numbers in file "Myfibonnaci.csv"	**07**
Q.4	**(a)**	Enlist types of plot available in python matplotlib module.	**03**
	(b)	Describe python function with keyworded variable length argument with example.	**04**

	(c)	Write following python functions: Function-1: Returns reverse string word wise. Function-2: Count occurrence of vowels from input string. Design Main python code where above functions are called.	**07**
		OR	
Q.4	**(a)**	Enlist python operators which results in Boolean output. Explain with example.	**03**
	(b)	Enlist python errors. Describe try-except block with example.	**04**
	(c)	Write a python program to find roots of following quadratic equation and plot it. $y = 3x^2 - 5x - 4$ in the range of -5 to 5 on plot. Put axes label and plot title.	**07**
Q.5	**(a)**	Enlist various tools available to program MicroPython.	**03**
	(b)	Describe lambda function with two examples.	**04**
	(c)	Sketch circuit diagram to interface 8-LEDs with GPIO of CPU* Write MicroPython program to blink LEDs in ring counter pattern. CPU* : Microcontroller board which supports Micropython Programming.	**07**
		OR	
Q.5	**(a)**	Describe merits and demerits of Micropython over python.	**03**
	(b)	Describe Modules in python.	**04**
	(c)	Sketch circuit diagram to interface 16x2 LCD with CPU* Write MicroPython program to display “Python Programming” on first line of LCD. CPU* : Microcontroller board which supports Micropython Programming.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2022

Subject Code:3151108 Date:04-01-2023

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. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	Explain dictionary in python with suitable example.	**03**
	(b)	Explain the use of pass, break and continue statement in python.	**04**
	(c)	Discuss the advantage and disadvantage of python.	**07**
Q.2	**(a)**	Explain the structure of **for** loop in python with suitable example.	**03**
	(b)	Write a short note on: Bitwise operators in python.	**04**
	(c)	Write a python program to print all the prime numbers between 100 to 200.	**07**
		OR	
	(c)	Write a Python program to generate pyramid pattern as given below. * * * * * * * * * *	**07**
Q.3	**(a)**	What are the advantage of choosing mnemonics variable name in python?	**03**
	(b)	What is different type of error in python? Explain in brief.	**04**
	(c)	Explain various type conversion function in python	**07**
		OR	
Q.3	**(a)**	Explain modulo operator in python with the help of suitable example.	**03**
	(b)	Explain the use of following built in function in python. max(), pow(), str(), input()	**04**
	(c)	Explain different mode for opening a file in python.	**07**
Q.4	**(a)**	Give comparison between Tuple and List in python.	**03**
	(b)	Write a python program to multiply all the numbers stored in a list.	**04**
	(c)	With the help of suitable example explain how can we read and write to a CSV file in python?	**07**

OR

Q.4 **(a)** What is the output of following code snippet? **03**

```
def fred():
print("Zap")

def jane():
print("ABC")

jane()
fred()
jane()
```

(b) What is the purpose of "def" keyword in python? **04**

(c) Explain the conversion of list to dictionary in python. **07**

Q.5 **(a)** Explain various arithmetic and logical operator in python **03**

(b) Explain catching exception using try and except in python. **04**

(c) What is set in python? Explain various methods that can be used with sets in python. **07**

OR

Q.5 **(a)** Explain the difference between python and micro python. **03**

(b) Write a short note on: Sensor programming using micro python. **04**

(c) Write a python program to turn on and off LED when the button is pressed. Button and LED are connected to GPIO pin. **07**

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