GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V EXAMINATION – WINTER 2025

Subject Code:3150312   **Date:17-11-2025**

Subject Name: Python Programming for Biomedical Engineers

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 the advantages of Python programming language over other languages.	**03**
	(b)	Write a short note on data types in Python.	**04**
	(c)	Write a program to get 5 numerical inputs from the user and display the sum and average of these numbers. Also display the largest and smallest value entered by the user.	**07**
Q.2	**(a)**	Define following terms in the context of Python programming: 1) Identifier, 2) Statement and 3) Operator	**03**
	(b)	What is precedence? Explain with at least 2 different examples.	**04**
	(c)	Provide List of Assignment and Comparison Operators with its description.	**07**
		OR	
	(c)	Briefly explain the conditional statements available in Python with examples.	**07**
Q.3	**(a)**	Explain the advantages of *args and **kwargs with examples.	**03**
	(b)	Write a program that fulfills following conditions: 1) 'while' loop is executed 5 times only. 2) Use 'True' as the Boolean Expression for while loop.	**04**
	(c)	Explain following methods of sets with proper syntax and example: add(), difference(), intersection(), issubset(), remove(), symmetric_difference() and union().	**07**
		OR	
Q.3	**(a)**	Identify the primary differences between a list and a tuple?	**03**
	(b)	Differentiate between following for list: 1) append() and insert() 2) pop() and remove()	**04**
	(c)	What is zip() function? Write a python program to illustrate the use of zip() function.	**07**
Q.4	**(a)**	Enlist methods associated with File Object.	**03**
	(b)	Give difference between Identifiers & Keywords.	**04**
	(c)	Briefly explain NumPy and Pandas module.	**07**
		OR	
Q.4	**(a)**	What is user defined function? Why are they useful in programming?	**03**
	(b)	What is NumPy? Explain in brief.	**04**
	(c)	Write a program that prompts the user to enter a text file, reads words from the file, and displays all the non-duplicate words in ascending order.	**07**
Q.5	**(a)**	Enlist the properties of 'Dictionary' class.	**03**
	(b)	Differentiate the syntax of if...else and if...elif...else with an example.	**04**

	(c)	Explain graphing and visualization methods in python with examples.	**07**

<center>OR</center>

Q.5	**(a)**	What is immutable data? Explain tupple as immutable data type with necessary example.	**03**
	(b)	Explain the syntax of for loop with an example.	**04**
	(c)	Write a program that creates a list of 10 random integers. Then create two lists by name odd_list and even_list that have all odd and even values of the list respectively.	**07**

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