Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 09 – 12- 2025 **Time:** 09:30am – 12:30pm

School: SOCSE	**Program:** B.Tech	
Course Code : CSE1500	**Course Name:** Computational Thinking using Python	
Semester: III	**Max Marks**: 100	**Weightage**: 50%

CO – Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
Marks	**14**	**12**	**10**	**14**	**28**	**22**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1.	Why is abstraction important in problem-solving?	**2 Marks**	**L2**	**CO1**
2.	List any two reasons why computational thinking is important.	**2 Marks**	**L2**	**CO2**
3.	Discuss about Membership Operators with examples.	**2 Marks**	**L2**	**CO5**
4.	Explain Local and global variables.	**2 Marks**	**L2**	**CO5**
5.	Give one example of pattern recognition in daily life.	**2 Marks**	**L2**	**CO1**
6.	What does the append () method do in a list?	**2 Marks**	**L1**	**CO4**
7.	What is string slicing? Give an example.	**2 Marks**	**L2**	**CO5**
8.	If a function does not have a return statement, it will return _____.	**2 Marks**	**L1**	**CO5**
9.	How do you add a new key-value pair to a dictionary? Give an example	**2 Marks**	**L3**	**CO4**
10.	Define user defined function with syntax.	**2 Marks**	**L1**	**CO6**

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	Discuss in detail the Pillars of Computational Thinking with suitable examples from daily life.	**10 Marks**	**L2**	**CO1**
	b.	Apply the four pillars of computational thinking to design a library management system. Explain each step in detail.	**10 Marks**	**L3**	**CO2**
		Or			
12.	**a.**	Explain data representation and abstraction with simple examples. Also describe the different types of abstraction.	**10 Marks**	**L2**	**CO1**
	b.	Explain how Computational Thinking enhances problem-solving skills beyond programming, with suitable examples.	**10 Marks**	**L3**	**CO2**

13.	**a.**	Explain procedure involved in Binary Search with a simple Python example.	**10 Marks**	**L2**	**CO3**
	b.	Define array in Python and demonstrate any four methods with a proper example.	**10 Marks**	**L3**	**CO4**
		Or			
14.	**a.**	Explain procedure involved in linear Search with a simple Python example**.**	**10 Marks**	**L2**	**CO3**
	b.	Define list in Python and demonstrate any four methods with a proper example.	**10 Marks**	**L3**	**CO4**

15.	**a.**	Define what a set is in Python and describe the operations: union, intersection, difference, and symmetric difference	**10 Marks**	**L2**	CO5
	b.	Explain how to check whether one set is a subset or a superset of another set in Python. Give a simple example using two sets and predict the output.	**10 Marks**	**L3**	**CO5**
		Or			
16.	**a.**	Define a dictionary in Python and describe the commonly used dictionary methods with suitable examples.	**10 Marks**	**L2**	**CO5**
	b.	Write a Python program to store student marks in a dictionary, using the student's name as the key and the marks as the value. Perform the following operations: 1. Add a new student and their marks. 2. Update an existing student's marks. 3. Display the final dictionary**.**	**10 Marks**	**L3**	**CO5**

17.	**a.**	Define user-defined functions in Python with the proper syntax, and explain the advantages of using functions.	**10 Marks**	**L3**	CO6
	b.	Write a Python program using a user-defined function to return the largest of three numbers.	**10 Marks**	**L3**	**CO6**
Or					
18.	**a.**	Define a recursive function in Python and explain positional and keyword arguments.	**10 Marks**	**L3**	**CO6**
	b.	Write a Python program to find the factorial of a number using a recursive function.	**10 Marks**	**L3**	**CO6**