CBCS SCHEME

USN | | | | | | | | | | |

BPLCK205B

Second Semester B.E./B.Tech. Degree Examination, June/July 2026
Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Demonstrate with example print( ), input( ), and string replication and develop a program to generate the Fibonacci sequence of length N, read N from console.	10	L2 L3	CO1
	b.	Explain for, while, break, continue statement in python with examples for each.	10	L2	CO1
		OR			
Q.2	a.	Explain Functions. Explain python functions with parameter and return statement. Develop a program to read name and year of birth of person and print whether person is senior citizen or not.	10	L2 L3	CO1
	b.	Describe flow control statement. Discuss if and if else statements with flow chart.	10	L2	CO1
		Module – 2			
Q.3	a.	Differentiate between i) = = and < operators when comparing two strings. ii) List slicing and string slicing with examples.	10	L2	CO2
	b.	Illustrate string traversal using for loop with an example and summarize the role of the in and not in operators in string processing. Also explain list mutability with example.	10	L2	CO2
		OR			
Q.4	a.	Explain the concept of list nesting with a suitable example. Read a multi-digit number (as chars) from the console. Develop a program to print the frequency of each digit with a suitable message.	10	L2 L3	CO2
	b.	Explain the concept of string immutability with an example and describe string slicing with suitable examples for [:n], [n:] and [n:m]	10	L2	CO2
		Module – 3			
Q.5	a.	Examine the key features and operations of python dictionaries and differentiate them from list. Implement a program to demonstrate insertion, deletion and lookup operations in a dictionary.	10	L4	CO3
	b.	Analyze the concepts of slicing, shape and dtype in Numpy. Illustrate each with a suitable code example showing how these properties affect array operations.	10	L4	CO3

VTU-08-07-2026 01:26:47pm - EP - EP - EP

		OR			
Q.6	**a.**	Analyze the concept of file handling in python and illustrate both reading and writing operations using relevant example program.	**10**	**L4**	**CO3**
	b.	Design a function that takes two objects representing complex numbers and return a new object representing their sum. Construct a class complex to model complex numbers and implement a program to compute the cumulative addition of N(N ≥ 2) complex numbers.	**10**	**L4**	**CO3**
		Module – 4			
Q.7	**a.**	Inspect the use of random and time modules in python. Develop a program that simulate a simple stopwatch that records random time intervals and calculate the average elapsed time.	**10**	**L4**	**CO4**
	b.	Develop a python script to create a module utilities.py with functions for square, cube and factorial of number. Import it in another file using all three important variants. Demonstrate the usage of each of the imported function.	**10**	**L3**	**CO4**
		OR			
Q.8	**a.**	Develop data summary generator read a CSV file (like COVID data or weather stats), convert to dictionary form and allow the user to run summary queries : max, min, average by column (p = 10).	**10**	**L3**	**CO4**
	b.	Examine the concept of name - spaces in python. Develop program to illustrate how variable lookup follows the LEGB (Local, Enclosing Global, Built-in) rule.	**10**	**L4**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the concepts of object identity in python using a point class. Illustrate how 'is' operator determines sameness and describe what happens when one reference is modified.	**10**	**L2**	**CO5**
	b.	Differentiate between pure function and modifiers in python and support your explanation with coding example.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Apply exception handling mechanism in python by developing a program that demonstrate the use of the try, except, else and finally block. Justify why exception handling is essential.	**10**	**L3**	**CO5**
	b.	Apply the principle of polymorphism by implementing a common interface method in two distinct classes and writing a program that invokes this method on objects of both classes.	**10**	**L3**	**CO5**

* * * * *