SET-3

INDIRA UNIVERSITY, PUNE

SCHOOL OF INFORMATION TECHNOLOGY- BSC DS

Backlog Examination (2025 Pattern) April/ May – 2026 - Semester – I

Subject Name: Problem Solving using Python Programming **Max. Marks: 25**
Subject Code: 25BDS101T **Time: 1:30 Hrs.**

Instructions

- All Questions are Compulsory.

CO #	Cognitive Ability	Course Outcome
CO1	**Remember**	Recall and describe fundamental concepts of problem-solving, algorithms, flowcharts, and Python syntax, including control structures, functions, and data types to build a foundation for program development.
CO2	**Understand**	Explain and illustrate the use of Python programming constructs, such as loops, conditionals, functions, and OOP principles, to solve computational problems through structured coding.
CO3	**Apply**	Write and implement Python programs by translating algorithms and flowcharts into executable code, using appropriate functions, loops, and data structures for problem-solving.

Q1.	**Attempt any 5 out of 7. (1 mark each)** **(5 Marks)** a. What is a pseudo code? b. Write any two advantages of using algorithms. c. List the basic data types supported in Python with example. d. What is a dictionary in Python? e. List the types of inheritances supported in Python. f. What is a class in Python? g. What is the difference between a module and a package?	CO1
Q2.	**Attempt any 2 out of 4. (5 marks each)** **(10 Marks)** a. Explain the advantages and limitations of using flowcharts in program development. b. Describe the use of conditional statements in Python with suitable examples. c. Explain tuples in Python and list any two differences between lists and tuples.	CO2

	d. Describe multilevel inheritance in Python with a diagram and example.	
Q.3.	**Attempt all questions. (5 marks each) (10 Marks)** a. Write the difference between "IS-A" and "HAS-A" relationships with suitable examples. **b.** Explain the concept of a package in Python and its importance. **OR**	CO3
Q.3	Write a Python script that imports math, datetime, and calendar modules to display the current date, a random number, and calculate the square root of a number. **(10 marks)**	CO3

*****