SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE

(AUTONOMOUS)

COURSE 3: PYTHON PROGRAMMING AND DATA STRUCTURES

SEMESTER II

(W.E.F.2025-26)

Program: BSC (DS & AI)

Question Bank

UNIT-1

5 Marks

1. Explain Identifiers in Python?
2. What are keywords in Python?
3. Define Variables in Python. How are Variables created and assigned values?
4. Explain Arithmetic and Relational Operators in Python with examples.
5. List any five features of Python

10 Marks

1. Explain Built-in Data Types in Python with suitable examples and programs.
2. What are Operators in Python? Explain the Classification of Operators with examples
3. Explain in detail the Features of Python. Why is Python considered a high-level language?
4. Explain Expressions and Operator Precedence Rules in Python with examples.
5. What are Identity Operators and Bitwise Operators? Explain with examples and truth tables.

UNIT-2

5 Marks

1. Differentiate between while loop and for loop
2. Explain loop control statements
3. Explain the scope of variables in Python
4. What are modules in Python?
5. Discuss the importance of functions
6. Write a program using for loop to display numbers from 1 to 10.

10 Marks

1. Write a detailed note on loops in Python. Explain while, for, nested loops with examples.
2. Explain Control Flow Statements in Python in detail.
3. Write a Python program to print Fibonacci series up to n terms using Recursion.
4. Explain different types of Function Arguments in Python with programs.
5. Explain Iterative Statements in Python.

UNIT-3

5 Marks

1. Define String in Python. Explain indexing and slicing with example.
2. Explain string methods with any five examples.
3. Define Dictionary. Explain how to add, update, and delete elements.
4. Differences between list and tuple.
5. What are Lists? Explain list indexing and slicing with example.

10 Marks

1. Explain list operations with examples
2. Explain tuples in python. Discuss tuple operations and built-in functions with suitable examples.
3. Explain dictionaries in python. Discuss dictionary methods and built-in functions with examples.
4. Explain comprehensions in Python (List, Set, Dictionary) with syntax and examples.
5. Compare List, Tuple, Set, and Dictionary with suitable examples in tabular form.

UNIT-4

5 Marks

1. Explain file open modes in Python
2. Write a short note on basic file operations
3. What is CSV file? How to read and write CSV files in Python?
4. Explain try-except block with example.
5. Define Class and Object with example.
6. What is Encapsulation ?

10 Marks:-

1. Explain File Handling in Python in detail.
2. Explain Exception Handling in detail With examples.
3. Explain OOP concepts in Python with suitable programs.
4. Explain Inheritance in Python with Examples.
5. Explain Encapsulation in detail with Examples.

UNIT-5

5 Marks

1. Define Abstract Data Structure (ADT). Explain its importance.
2. Define Stack. Explain LIFO principle with example.
3. Define Queue. Explain FIFO principle with example.
4. Explain basic Tkinter widgets
5. What is a Linked List? Explain the structure of a node.

10 Marks

1. Explain Abstract Data Structures (ADT) in detail. Discuss characteristics and importance with examples.
2. Write a Python program to implement Singly Linked List with insertion, deletion, and traversal operations.
3. Compare Stack and Queue with suitable examples.
4. Explain GUI Programming using Tkinter.
5. Write a Python program to create a Login Form using Tkinter.