

SAMPLE PAPER
CS-304/ AL/CD-304
B.TECH (CSE/AIML) III SEMESTER
EXAMINATION
PYTHON

Maximum Marks: 70

Time Allowed: 3Hours

Note:- Attempt all questions internal choice are given.

(SECTION -A)

1. Short Answer Type Question (Attempt Any Five) [5x6=30]

- i. Explain with examples, the difference between mutable and immutable data types in Python
- ii. What is a set in Python? How do you create a set and perform basic operations on it?
- iii. Write a Python program to demonstrate the use of a nested loop to print a pattern, e.g., a triangle.
- iv. Write a Python function to calculate the Fibonacci series up to n terms using recursion.
- v. Explain with examples how to read from and write to a file in Python.
- vi. Discuss the main components of a DBMS.
- vii. How do you declare a variable in Python? Provide an example.

(SECTION -B)

2. Long Answer Type Question (Attempt Any Four) [4x10=40]

- i. Discuss the differences between lists, tuples, sets, and dictionaries in Python. Provide examples demonstrating their unique features and use cases.
- ii. Discuss the differences between list comprehension, dictionary comprehension, and set comprehension. Provide examples for each to illustrate their uses and advantages.
- iii. Explain the concept of recursion in Python. Write a Python program to solve the Tower of Hanoi problem using recursion.
- iv. Discuss the differences between a regular function and a lambda function in Python. Provide examples showing how each can be used to achieve the same result.
- v. Discuss the different methods available in the random module. Write a program to simulate a simple dice roll using the random module.
- vi. Write a Python program to connect to a MySQL database, create a table, insert data, and retrieve data. Explain each step of the process.
- vii. Explain the concept of iterators in Python. Write a program to iterate over a list using an iterator..