

LNCT UNIVERSITY, BHOPAL

Enrollment No.

AL - 206
B. TECH (AIML) II SEMESTER
EXAMINATION [JUNE-2025]
DATA ANALYSIS USING PYTHON

Maximum Marks: 70**Time Allowed: 3 Hours****Note:- Attempt all questions Internal choices are given.****(SECTION –A)****1. Short Answer Type Questions (Attempt Any Five)****[5x6=30]**

- What is the purpose of the %run command in Python?
- What is the difference between a list, tuple and a dictionary in Python?
- What is broadcasting in NumPy explain with example?
- What is a DataFrame in Pandas? Explain with program?
- What is the purpose of legend() in Matplotlib?
- What is a lambda function in Python?
- How do you read a CSV file into a DataFrame using Pandas? Explain with short program?

(SECTION –B)**2. Long Answer Type Questions (Attempt Any Four)****[4x10=40]**

- Explain the working of the Python interpreter and the use of Python features like tab completion, introspection, and magic commands. How do these tools enhance the programming experience?
- Explain the differences between Python's primitive and derived data structures with examples. How are dictionaries and sets different in terms of functionality and use-cases?
- Describe NumPy's ndarray object. How does NumPy handle array indexing and slicing? Give examples of Boolean indexing and axis manipulation?
- Discuss the structure and features of Pandas DataFrame. How do you perform operations like indexing, filtering, reindexing, and sorting on a DataFrame? Provide code snippets?
- Compare various plot types available in Matplotlib and Seaborn for data visualization. When would you use a histogram, line plot, or scatter plot?
- Write a Python program using NumPy to multiply two matrices. Your program should take input dimensions and elements from the user and display the resultant matrix?