

LNCT UNIVERSITY, BHOPAL

Enrollment No.

AL - 206

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

Maximum Marks: 70

Time Allowed: 3Hours

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?