

Exam Seat No: \_\_\_\_\_

**KADI SARVA VISHWAVIDYALAYA**

**BE SEMESTER-V (New) Examination October-2024**

**Subject Code: CS501-N**

**Subject Name: DATA SCIENCE USING PYTHON PROGRAMMING**

**Date: 19/10/2024**

**Time: 12:30PM to 3:30PM**

**Total Marks: 70**

**Instructions:**

1. Answer each section in separate answer sheet.
2. All questions are Compulsory.
3. Indicate clearly, the option you attempt along with its respective question number.
4. Use the last page of main supplementary of rough work.

**Section-I**

- Q-1** (A) What is Machine Learning? Explain its type. [5]
- (B) Describe different Applications of Data Science. [5]
- (C) Write a Python function that accepts a string and calculates the number of uppercase letters and lowercase letters. [5]
- OR**
- (C) Write a Python function that prints out the first n rows of Pascal's triangle. [5]
- Q-2** (A) Explain Lambda, Map and Filtering with its example. [5]
- (B) Explain the scikit (sklearn) library with examples. [5]
- OR**
- (A) How to Capturing, Preparing and Working in data science using python. [5]
- (B) Describe String Slicing with an example. [5]
- Q-3** (A) Discuss Histogram, Binnings and Density with example in data science [5]
- (B) How to perform data indexing and selection using pandas in data science? Explain with examples. [5]
- OR**
- (A) Describe basic text processing function with example. [5]
- (B) Discuss Histogram, Bar Chart, Pie Chart using matplotlib in data science. [5]

## Section-II

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|------------|------------|---|------------|
| <b>Q-1</b> | <b>(A)</b> | Discuss List, Tuple, Dictionary, Set with example.      | <b>[5]</b> |
|            | <b>(B)</b> | Differentiate between numpy and pandas.                 | <b>[5]</b> |
|            | <b>(C)</b> | What is a function? Explain function examples in python | <b>[5]</b> |

**OR**

- (C)** Define Data Science. Explain advantages and disadvantages of data science. **[5]**

- Q-2 (A)** List and explain popular tools used to perform data science. **[5]**
- (B)** What is CGI Programming in Python? Explain it with an example. **[5]**

**OR**

- (A) List and describe any five real time applications of machine learning. [5]  
(B) Explain basic building blocks of ANN. [5]

- Q-3 (A)** What is NLP? Explain its components. [5]
- (B)** List and describe any five real time applications of machine learning [5]

**OR**

- (A) Explain Text Classification, Text wrapping, Text summarization. [5]
- (B) Define Neural Network with its types, application and advantages. [5]