Exam Number: _____

KADI SARVA VISHWAVIDYALAYA
B.E. 5th SEM (REGULAR/ATKT) EXAMINATION OCTOBER 2023

Subject Name: Data Science using Python Programming **Subject Code: CS501-N**
Date: 28/10/2023(Saturday) **Time: 12.00 pm to 03.00 pm** **Total marks: 70**

Instructions:

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

Section-I

Q.1 (A)	Discuss the practical advantages and potential drawbacks of implementing data science in various applications. How data science use in decision-making processes?	(5)
(B)	What is the significance of data perspective libraries in the field of data science? Provide examples of popular data perspective libraries and explain their roles in data analysis.	(5)
(C)	What are the popular tools used in data science? Explain any three in brief.	(5)
	OR	
(C)	Write a Python function to find the Max of three numbers.	(5)
Q.2 (A)	List and explain some advantages of using Python over other programming languages. Provide specific examples or use cases where Python's advantages become evident.	(5)
(B)	Explain LIST and TUPLE data structure of python with example.	(5)
	OR	
Q.2 (A)	Explain following python operator with example. (a) Membership (in and not in) (b) Identity (is, is not)	(5)
(B)	Explain DICTIONARY and SET data structure of python with example.	(5)
Q.3 (A)	What is Data Cleaning? What kind of Bad Data could be available in the dataset? Explain: (1)dropna() (2)fillna() (3)drop_duplicates()	(5)
(B)	What is Series and DataFrame in pandas? Explain them with example.	(5)
	OR	
Q.3 (A)	How string is reversed in python? List few methods of string and explain any two with example.	(5)
(B)	Explain in details plot() function available in matplotlib.pyplot module.	(5)

Section-II

Q.4 (A)	Define Neural Network with its types, application and advantages.	(5)
(B)	Explain Map and Filtering with example.	(5)
(C)	Define: Machine Learning and explain mean, mode, median with example.	(5)
	OR	
(C)	Explain the Supervised and Unsupervised Learning with example.	(5)
Q.5 (A)	What is Natural Language Processing? Explain its components.	(5)
(B)	Write a Python function that accepts a string and calculate the number of upper-case letters and lower-case letters.	(5)
	OR	
Q.5 (A)	Explain with example how Text Classification, Text Wrapping, Text Summarization is performed in Natural Language Processing.	(5)
(B)	Explain basic building block of ANN.	(5)
Q.6 (A)	Explain the modelling process involved sklearn library.	(5)
(B)	Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.	(5)
	OR	
Q.6 (A)	Describe basic text processing function with example.	(5)
(B)	Write a Python program to load the iris data from a given csv file into a DataFrame and print the shape of the data, type of the data and first 3 rows.	(5)