

Roll.No.

25UDSCT1001

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai - 600 044.

B.Sc.(DS) - END SEMESTER EXAMINATIONS - NOVEMBER 2025  
SEMESTER - I

**25UDSCT1001 - Introduction to Data Science**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. Explain the various types of data and their importance in data science.
2. Illustrate the characteristics and sources of Big Data with examples.
3. Describe the execution environment of Python programs and their structure.
4. Explain the concept of functions and flow control statements in Python with examples
5. Differentiate between lists, tuples, and dictionaries with suitable examples.
6. Describe the features of NumPy arrays and Pandas data frames.
7. Illustrate how Pandas is used to manage and explore datasets.
8. Explain the basic plotting functions available in Matplotlib and Seaborn.

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Discuss in detail about data preparation, gathering and exploration techniques. Explain how they contribute to insight generation.
10. Explain with suitable examples the use of functions and control structures in Python to solve real-world data problems.
11. Compare and contrast different Python data structures such as lists, tuples, sets, and dictionaries. Demonstrate their usage in handling data.
12. Demonstrate how to load, manipulate, and analyze datasets using NumPy and Pandas libraries with examples.
13. Evaluate different data visualization packages like Matplotlib, Seaborn, Plotly, and Dash. Justify their use in specific scenarios.

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