

Roll.No.

25UBICT5013

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.Com. ISM - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - V

25UBICT5013- Data Analytics with Python

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. What is NumPy? Explain the advantages of using NumPy arrays over Python lists.
2. Explain how to reshape arrays in NumPy. Write the syntax and example for reshape() function.
3. Illustrate the NumPy's Broadcasting-Rules?
4. What is array sorting in NumPy? Explain the use of the np.sort() function with an example.
5. Define a Pandas DataFrame. How is it different from a Series object?
6. Discuss the role of the on, left_on, and right_on parameters in the Pandas merge() function.
7. Write a short note on inner join and outer join in Pandas with suitable examples.
8. Evaluate the visual advantages of using legends and colorbars in data presentation.

Section C

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

9. Describe various array attributes ndim, shape, size, dtype, itemsize. Explain their use with examples.
10. Discuss the different sorting algorithms available in NumPy. Write a program that demonstrates sorting in ascending and descending order.
11. Compare and contrast Series and DataFrame with suitable examples. How do they help in structured data handling?

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12. Discuss how the merge() function can be customized using parameters like how, on, left_on, and right_on. Provide examples.
13. Evaluate the impact of proper labeling, legends, and colorbars on the readability of data visualizations.
