
SAMPLE PAPER 3
End Term Examination
Data Analysis Using R and Python
Time: 3 Hours Maximum Marks: 70

SECTION A (Compulsory)

7 × 2 = 14 Marks

1. Define quantitative data.
2. What is a data frame in R?
3. Define a violin plot.
4. Mention any two file handling functions in Python.
5. What does `head()` do in R/Python?
6. Define multivariate data.
7. What is a NumPy array?

SECTION B

Attempt any four questions.

1. Explain categorical vs numerical data with examples and applications.
2. Discuss the structure and internal representation of data frames in R.
3. Describe `ggplot2`'s grammar of graphics in detail.
4. Explain Pandas indexing techniques (`loc`, `iloc`) with examples.
5. Describe string manipulation in Python with examples.
6. Explain descriptive statistics and show how to compute them using R and Pandas.
7. Discuss reshaping data using `pivot`, `melt`, and `pivot.table` in Pandas.
8. Describe elementwise operations and universal functions in NumPy.