

**SHIVAJI COLLEGE, UNIVERSITY OF DELHI**  
**DEPARTMENT OF ECONOMICS**  
**INTERNAL ASSIGNMENT/PROJECTS/PRESENTATIONS**  
**(Academic Year 2023-24)**

Name of the Course	: B.A. program	Semester	: V
Name of the Paper	: Data Analysis	Maximum Marks	: 10
Faculty Name	: Ajay	Last Date of Submission:	1 <sup>st</sup> November

Instructions: This assignment is designed to assess your understanding of various statistical concepts and data analysis techniques. Please answer all the questions and provide explanations where necessary. You may use statistical software like R or Excel to perform calculations and generate necessary plots if required.

**Question 1: Skewness & Kurtosis**

- a) Define skewness in statistical terms and explain why it is important in data analysis.
- b) Calculate the skewness for a given dataset using the formula for skewness. Interpret the result. Does the skewness indicate a positive or negative skew? Provide an example dataset for your calculation.
- c) Define kurtosis in statistical terms and discuss its significance in data analysis.
- d) Calculate the kurtosis for a given dataset using the formula for kurtosis. Interpret the result. Does the kurtosis indicate leptokurtic, mesokurtic, or platykurtic behavior? Provide an example dataset for your calculation.

[5 marks]

**Question 2: Regression & Sampling techniques**

- a) Explain the concept of linear regression and its application in data analysis.
- b) Using a real-world dataset of your choice, perform a simple linear regression analysis. Present the regression equation, coefficients, and interpret their meaning in the context of the dataset. Include a scatterplot with the regression line.
- c) Explain the importance of sampling in data analysis.
- d) Compare and contrast simple random sampling, stratified sampling, and systematic sampling. Provide examples of situations where each of these sampling techniques would be most appropriate.

[5 marks]



