TUTOR MARKED ASSIGNMENT

Course Code	**:**	**ECO-07**
Course Title	**:**	**ELEMENTS OF STATISTICS**
Assignment Code	**:**	**ECO-07/TMA/2026**
Coverage	**:**	**ALL BLOCKS**

Maximum Marks: 100

Attempt all the questions:

Q.1 Explain the scope and importance of Statistics in economic analysis. Discuss the limitations of statistical methods and examine how misuse of statistics can lead to misleading conclusions. **(5+5+5)**

Q.2 Describe the various methods of collection of statistical data. Critically evaluate primary and secondary data with reference to reliability, suitability, and sources. **(15)**

Q.3 Explain the concept of measures of central tendency. Compare arithmetic mean, median, and mode, and discuss the situations in which each measure is most appropriate. **(15)**

Q.4 Discuss the concept of correlation and regression. Explain the methods of measuring correlation and analyse the significance of regression analysis in economic decision-making. **(5+10)**

Q.5 Describe the construction of frequency distribution. Explain the concept of class intervals and class limits with suitable examples. **(10)**

Q.6 Explain the concept of time series. Discuss the components of time series and their importance in economic forecasting. **(10)**

Q.7 Write short notes on the following: **(4x5)**

a) Quartile Deviation
b) Index Numbers
c) Absolute Measures of Dispersion
d) Census Method of Data Collection

Q.1 Explain the scope and importance of Statistics in economic analysis. Discuss the limitations of statistical methods and examine how misuse of statistics can lead to misleading conclusions. (5+5+5)

Answer

Statistics is the systematic study of numerical facts. In economic analysis it includes the collection, classification, presentation, analysis and interpretation of data so that economic problems can be understood in measurable terms. Economics deals with matters such as income, prices, employment, production, consumption, trade and growth. These are large and changing phenomena, so statistical methods are necessary for describing them and for testing economic ideas against observed data.

Scope of Statistics in economic analysis

The scope of Statistics extends from the first stage of collecting data to the final stage of drawing conclusions. Data may be obtained through a census, sample survey, administrative records or other reliable sources. After collection, the observations are edited, classified and presented through tables, frequency distributions, diagrams and graphs. Measures such as mean, median and mode summarize the central position of a series, while range, quartile deviation and standard deviation show dispersion. Correlation and regression study relationships between variables, index numbers measure relative changes, and time-series methods help in studying movements over time.

Statistics is also used in estimation and comparison. Per capita income, inflation rates, unemployment rates, productivity indices and national income aggregates are statistical measures used to compare periods, regions and groups. Sampling makes it possible to study a large population at lower cost, while statistical inference permits conclusions about a population from properly selected sample evidence. Thus the subject covers both descriptive work and the analytical use of data for economic reasoning.

The scope also includes the study of changes across both time and space. Cross-sectional data can compare households, firms or regions at one point of time, while time-series data trace the same economic variable across periods. Statistical sampling, estimation and tests of significance can be used when the analyst must judge whether an observed difference is likely to reflect a wider population rather than only the particular sample studied.