Q1 What do you mean by business statics ? Explain various definition ?

Ans The use of statistical methods and instruments for data analysis and interpretation ~~for~~ in support of corporate decision-making is know as "business statistics". To assist businesses in making wise judgements it aids in the organisation, interpretation, and summerisation of data importants definitions consist of:

① Descriptive statistics : Provides a means and median sum of the data.

② Inferential statistics : Forecasts future events by utilising a simple of data.

③ Probability : Evaluates how likely an event is to occur.

④ Regression analysis : Analyses how variables relate to one another.

⑤ Time series analysis : forecasts trends by analysing data over a period of time.

These resources help firms with risk management, planning, and decision making.

Q2 Explain the function of stastitics ?

Ans Statistics serves several key functions in analyzing and interpreting data . It help in :

① Data collection : Gathering relevant data for analysis.

② Data organization: Structuring data for easy understanding.

③ Data Analysis: Identifying trends, patterns, and relationships within data.

④ Decision-Making: Assisting business in making informed decisions based on data-driven insights.

⑤ Interpretation: Drawing conclusions and making inferences from data analysis.

⑥ forecasting: Predicting future trends based on historical data.

These functions support better Planning, Performance measurement, and risk management.

Q3 Define stastics and explain its characteristics?

Ans. Statistics is the science of collecting, organizing, analyzing, interpreting, and presenting data to make informed decisions. It helps in understanding patterns and trends, predicting outcomes, and solving problems using numerical data.

Key characteristics of Statistics:

① Quantitative: Involves numerical data.

② Aggregate: Deals with group data, not individual observations

③ Variability: Considers fluctuations in data.

④ Objective: Aims to present unbiased results.

⑤ Predictive: Helps forecast future trends based on historical data.

These traits make statistics essential for data-driven decision-making.

Q4 What do you mean statistical investigation? Explain Universe & sample?

Ans A statistical investigation involves systematically collecting, analyzing, and interpreting data to draw conclusions or make decisions.

⊛ Universe (Population): Refers to the entire group of individuals or elements that share a common characteristic, from which data is to be collected.

⊛ Sample: A subset of the universe, selected for analysis. It represents the population and is used to make inferences about the whole population when studying every element is impractical.

Q5 What is central tendency? Explain various measurement of central tendency?

Ans Central tendancy refers to the measure that identifies

the centre or typical value of a dataset. The main measures are:

① Mean: The average of all values

② Median: The middle value when data is sorted.

③ Mode: The most frequent value in the dataset. These measures provide insights into the general trend of data distribution. Mean is sensitive to outliers, while median and mode are more resistant.

Q6 What is dispersion? Explain various measurement tool of dispersion?

Ans Dispersion refers to the spread or variability of data in a dataset. The main tools to measure dispersion are:

① Range: The difference between the highest and lowest values.

② Variance: The average of squared deviations from the mean.

③ Standard Deviation: The square root of variance, indicating the average spread around the mean.

④ Interquartile Range (IQR): The range between the first and third quartiles, showing the spread of middle 50% of data.

Q7. What is co-relation? Explain method of co-relation calculation?

Ans Correlation measures the strength and direction of the relationship between two variables. Key methods for calculating correlation include:

① Pearson's correlation coefficient: Measure linear relationship, ranging from -1 (perfect negative) to +1 (perfect postive).

② Spearmin's Rank correlation: Assesses monotonic relationships using ranked data.

③ Kendall's Tau: Measures ordinal associations between variables. These methods help

determine how one variable changes in relation to another, but they don't imply causation.

Q8 What is Index Numbers? Explain fishers ideal index number and its features.

Ans An index number measures relative changes in variables like prices, quantities, or economic indicators over time. fisher's ideal Index is a geometric mean of the Laspeyres and Paasche indices, combining both price and quantity changes.

Features:

① Geometri Mean: Ensures accuracy

by balancing upward and downward biases.

② Time Reversibility: Yields the same result when periods are swapped.

③ factor Reversibility: Product of price and quantity indices equals value index.

Q9 What is time series analysis? Explain its objective and methods?

Ans Time series analysis examines data points collected or recorded at specific time intervals to identify trends, patterns, and seasonal variations.

Objectives

① Trend Analysis: Identifies long-term movement.

② Seasonal variation: Detects regular fluctuations.

③ forecasting: Predicts future values.

Methods:

① Moving Average: Smoothens data to observe trends.

② Exponential Smoothing: Weights recent data points more heavily.

③ Decomposition: Breaks down data into trend, seasonal, and random components.