

Q: What is Statistics? ✓

Ans: - (It is the science of collection, presentation, analysis and interpretation of numerical data)

OR

The mathematical science of making decisions and drawing conclusion from data in situation of uncertainty.

Q: What are the meanings of Statistics?

Ans: There are three meanings of Statistics.

- i) statistics in plural sense.
- ii) statistics in singular sense.
- iii) statistics as a plural of statistics.

Q: What is the meaning of statistics in plural sense.

Ans: In plural sense, "statistics" is described as the numerical observations collected for specific purpose in a systematic manner.

e.g: The wages of workers are called statistics of wages.

Q: What is the meaning of Statistics in singular sense.

Ans: In singular sense "Statistics" is described as a method used in the collection, presentation, analysis and interpretation of data.

Q: Define Variable. ✓

Ans: Any characteristic that varies from one individual to other either in quantity or in quality is called variable.

e.g: i) The no. of rooms per house in RTK.

ii) The no. of persons living per house in RTK.

(2)

Constant: Any value which does not change, but remains fix is called a constant e.g. $\pi = \frac{22}{7}$

☐ Discrete variable

Ans: Any variable having countable no. of values is called discrete variable.

e.g. The no. of students per class in K.F.C.

☐ Continuous variable

Ans: Any variable having measurable values in an interval is called continuous variable.

e.g. Height, speed, temperature, age and time etc.

☐ Random variable

Any variable whose values are determined by the outcomes of a random experiment is called random variable.

e.g. i) The no. of leaves per branch on a tree.

ii) The no. of accidents occurred per day on G.T. Road.

☐ Qualitative variable

Any variable which changes only in quality from one individual to other is called qualitative variable or Attribute.

e.g. i) Blindness

ii) Intelligence or beauty etc.

☐ Quantitative variable

Any variable which changes only in quantity from one individual to other is called quantitative variable.

i) Per capita income in R.Y.K.

ii) Per month sale of motor cycles in R.Y.K. for 2009

Sample ☒
 Sample: The representative part of the whole ③ ③
 aggregate under study is called sample.

eg: A medical doctor takes a sample of medicine
 to check its effectiveness.

Population: ☒

Population is the aggregate or totality of units
 of certain commodity.

eg: i) The Population of teachers in Rtu

ii) The Population of stars in the sky.

Parameters: ☒

The numerical values, such as the mean, the median
 and the S.D etc. computed from population
 data are called parameters or Population parameters.

eg: Pop. mean: $\mu = \frac{\sum x}{N}$

Pop. Variance: $\sigma^2 = \frac{\sum (x - \mu)^2}{N}$

Statistic: ☒

The numerical values, such as the mean, the median
 and the S.D etc. computed from sample data
 are called statistic.

eg: sample mean: $\bar{x} = \frac{\sum x}{n}$

sample variance: $s^2 = \frac{\sum (x - \bar{x})^2}{n}$

Q. What are various types of statistics?

Ans:

- i) Descriptive statistics.
- ii) Inferential statistics.
- iii) Theoretical statistics.
- iv) Applied statistics.

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Descriptive Statistics:

A branch of statistics which deals with the collection, presentation and analysis of data is called descriptive statistics.

Inferential Statistics:

A branch of statistics which deals with drawing inferences about population on the basis of sample is called inferential statistics.

Theoretical Statistics:

A branch of statistics which deals with the formation of general principles and decision to be applied.

Applied Statistics:

It deals with kit of tools of the statistical methodology for analysis.

Q: What is data? ✓ The collection of ~~raw~~ facts and figures is called data.

The collection of raw information about some purpose is called data.

Primary data: ✓

(By primary data, we mean the data collected for the first time) and raw material of inquiry.

Secondary data: ✓

By secondary data, we mean the data, which has undergone any sort of statistical treatment at least once.

Q: What are the sources of Primary data? ⑤

Ans: The sources of Primary data are.

- i) Personal investigation ✓
- ii) Through investigators ✓
- iii) Through questionnaire ✓
- iv) Through local sources ✓
- v) Through telephone ✓
- vi) Through internet ✓

Q: What are the sources of Secondary data?

Ans: The sources of Secondary data are.

- i) Government organizations ✓
- ii) Semi govt. organizations ✓
- iii) Teaching and Research organizations ✓
- iv) Research journals ✓
- v) Internet ✓

: classification of data

The process of arranging the data into different classes or categories according to some common factors is called classification.

eg: The process of sorting letters in a post office.

: Tabulation - The process of arranging the data into rows and columns for the purpose of comparison and analysis is called tabulation.

: Array: The arrangement of data in ascending or descending order is called an array.

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