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INTRODUCTION TO STATISTICS.

Q1.) What is statistics?

A1.) The systematic treatment of quantitative information is known as statistics. This can be explained in singular and plural sense.

SINGULAR SENSE

Statistics is defined as a science of collection, presentation, analysis, and interpretation of numerical data.

1.) Collection of data:

It is the first step of any statistical study and becomes the basis of statistical analysis. Therefore, the data should be collected with maximum care.

2.) Organisation of data:

The data so collected has to be organised by editing, classifying or tabulating.

3.) Presentation of data:

Here, the data organised is presented in some systematic manner that can be a table, a graph, etc., this is done to facilitate analysis.

4.) Analysis of data:

The organised data is analysed using various tools like averages, dispersion, etc.

5.) Interpretation of data:

It means making conclusions on the basis of analysed data. It is the step for which the data was collected, organised and analysed.

PLURAL SENSE

In plural sense, statistics means aggregates of facts affected by multiplicity of causes numerically expressed and estimated according to a ~~reasonable~~ reasonable standard of accuracy collected in a systematic manner for a pre-determined purpose. This definition highlights following-

1.) Aggregates of facts:

Statistics is always based on no. of informations and not on single information.

For eg → Pocket money of Chintu only cannot help in getting the average pocket money of class 11th.

2.) Affected by multiplicity of causes:

Statistics are dependent upon no. of factors and the data is not dependent on a single factor but many.

3.) Statistics are numerically expressed:

Any qualitative information does not help in statistics unless they are supported by some no's.

For eg → A colony has very rich people. This information is useful only when the data about incomes is mentioned.



- 4.) Estimated according to reasonable standard of accuracy:
Normally, the actual data is collected and estimated but, when area of enquiry is large, accurate enumeration may not be possible. In such cases, experts make estimations on the basis of observation, and the degree of accuracy depends on nature of enquiry.
- 5.) Collected in a systematic manner:
Statistics collected without any order or system are unreliable and inaccurate. Therefore, it has to be collected in a systematic manner.
- 6.) Collected for a pre-determined purpose:
If there is no purpose of collection of data, the statistics would be more or less ~~valueless~~ useless.
- 7.) Placed in relation to each other:
Statistics are often required for comparisons so therefore, they should be comparable.
- 8.) What are the limitations of statistics?