

UNIT 2 : SUMMARIZATION OF DATA**1. Define statistics or Data summarization**

The collection , presentation, analysis, organization, and interpretation of data is known as **Statistics or Data summarization**

2. Define population in statistics.

A population is the group of people from which a statistical sample is taken in statistics.

3. Define sample in statistics.

A sample is a representative group of a population chosen at random. It is a smaller subset selected from the population and possesses all of its traits.

4. Mention the different types of Statistics.

There are two types of statistics .

- i) Descriptive statistics
- ii) Inferential statistics.

5. Define Descriptive statistics.

Statistics used to summarize a set of data is called Descriptive statistics. Sample data is summarized using charts, tables, and graphs.

6. Define inferential statistics.

Statistics used to draw conclusions (or infer) about a population based on a sample of data that was collected from the population is called Inferential statistics.

7. What is Ungrouped data ?

Data that is gathered for the first time during a study or experiment is called Ungrouped data.

8. What is Grouped data ?

Data that is grouped together in different categories (classes or bins) is called Grouped data.

9. Define frequency in statistics.

In statistics, frequency of an event is defined as the number of times the observation occurred in an experiment or study.

10. What is frequency distribution table ?

A frequency distribution is a table that shows “classes” or “intervals” of data entries with a count of the number of entries in each class.

11. Mention the types of Frequency distribution table.

The different types of Frequency distribution table are

- i. Grouped frequency distribution.
- ii. Ungrouped frequency distribution.
- iii. Cumulative frequency distribution.
- iv. Relative frequency distribution.
- v. Relative cumulative frequency distribution.

12. Mention the basic rules for constructing frequency distribution table for less number of observations.

Following are the basic rules for constructing a frequency distribution table for less number of observations.

- i. First write the categories in one column
- ii. Tally the numbers in each column
- iii. Add up the number of tally marks in each row and record them in frequency column.

13. Define Class interval in statistics.

A class interval can be defined as the difference between the upper and lower class limit of a frequency distribution table. In other words, it is the width of each class.

14. Mention the basic rules for constructing frequency distribution table for large number of observations .

Following are the basic rules for constructing a frequency distribution table for large number of observations .

- i. Find the lowest and highest values of the variables.
- ii. Decide the width of class intervals
- iii. Count all the possible values of the variables in that class interval.

15. What is relative frequency table ?

Relative frequency shows the percentage of observations in each range. The distribution table showing relative frequency is called relative frequency distribution table.

16. Mention the steps of enabling “ Analysis tool pack “ in Excel for windows.

1. Click the **File** tab, click **Options**, and then click the **Add-Ins** category.
2. In the **Manage** box, select **Excel Add-ins** and then click **Go**.
3. In the **Add-Ins** box, check the **Analysis ToolPak** check box, and then click **OK**.
 - a. If **Analysis ToolPak** is not listed in the **Add-Ins available** box, click **Browse** to locate it.
 - b. If you are prompted that the Analysis ToolPak is not currently installed on your computer, click **Yes** to install it.

17. What is graphical representation?

Graphical representation is a form of visually displaying data through various methods like graphs, diagrams, charts, and plots.

18. Mention the uses of graphical representation?

The advantages of using graphs are listed below:

1. The graph helps us to understand the data or information even when we have no idea about it.
2. It saves time.
3. It makes it easier for us to compare the data for different kinds.
4. It helps to determine the mean, median and mode for different data
5. It is helpful for less literate audience

19. Mention the different types of graphs that are used to summarize and organize data.

Types of Graphical Representation

1. Line graph
2. Bar graph
3. Pie chart
4. Histogram
5. Frequency polygon
6. Box Plot

20. Define the following

- a) Bar graph b) Pie chart c) Line graph d) Histogram e) Frequency polygon f) Box plot
g) Leaf stem plot.

a) **Bar graph** : A Bar graph is a graph that represents the categorical data using rectangular bars. There are two types of Bar graphs.

- i. Horizontal Bar graph
- ii. Vertical Bar graph

b) **Pie chart** : A pie chart is a type of graph that represents the data in the circular graph. The slices of pie show the relative size of the data.

c) **Line graph** : A line graph is a graph that uses lines to connect individual data points. A line graph displays quantitative values over a specified time interval.

- d) **Histogram** : A histogram is a graphical representation of data in a grouped frequency distribution with continuous classes. They resemble bar graphs, but there are no gaps between the consecutive rectangles.
- e) **Frequency polygon** : A frequency polygon is defined as a line graph created by joining all of the top points of a histogram.
- f) **Box plot** : A box and whisker plot (Box plot) displays the five-number summary of a set of data. The five-number summary is the minimum, first quartile, median, third quartile, and maximum.
- g) **Leaf stem plot** : A stem and leaf plot is a unique table where values of data are split into a stem and leaf. The first digit or digits will be written in stem and the last digit will be written in leaf.