

CBSE Class 09 Mathematics

Revision Notes

CHAPTER 14

STATISTICS

1. Collection of Data

2. Representation of Data

3. Graphical Representation of Data

4. Measures of Central Tendency

- There are two types of data (i) Primary (ii) Secondary
- We can represent the data by (i) ungrouped and grouped frequency distribution.
- Data can also be represented by (i) bar graph (ii) Histogram (iii) Frequency polygons
- Class mark of grouped data is $\frac{\text{lower limit} + \text{upper limit}}{2}$
- Measure of central tendencies are mean, median, mode.
- Mean $(\bar{x}) = \frac{\text{sum of all observations}}{\text{Total no. of observations}}$
- If sum of all observations is denoted by $\sum fixi$ and their occurrence by $\sum fi$ i.e. frequency, then mean is $(\bar{x}) = \sum fixi \div \sum fi$
- Median: Arrange the observations in ascending or descending order then if numbers of observations (n) are odd then median is $\frac{n+1}{2}th$ term.

If no. of observations (n) are even then median is average of $\frac{n}{2}th$ and $\frac{n}{2} + 1th$ terms.

- Mode: The observation whose frequency is greatest.
- Mode = 3 median - 2 mean.

Graphical representation of data

- **Bar graphs** - A bar graph is a pictorial representation of the numerical data by a number of bars (rectangles) of uniform width erected horizontally or vertically with equal spacing between them. Each rectangle or bar represents only one value of the numerical data and so there are as many bars as the number of values in the

numerical data, The height or length of a bar indicates on a suitable scale the corresponding value of the numerical data.

- **Histogram** - A histogram or frequency histogram is a representation of a frequency distribution in the form of rectangles with class intervals as bases and heights proportional to corresponding frequencies such that there is no gap between any two successive rectangles.
- **Frequency polygon** - A frequency polygon of a given frequency distribution is another method of representing frequency distribution graphically.