<u>Summary</u>

• Means are mathematical formulations used to characterize the central tendency of a set of numbers. Most people are familiar with the "arithmetic mean", which is also commonly called an average. While calculating the measure of mean equal importance is given to all the data points in the data. However, there are cases where not all the items are of equal importance and importance of the data point is by its nature.

• Geometric mean is the 'nth' root of the product of 'n' items of a series. For example if there are two or three items in a series then the square root or the cube root of the products of the item in the series is taken.

• The harmonic mean is a measure of central tendency restricted in its field of usefulness for data expressed as rates such as Kms, per hour, per litre, per semester, tonnes per month, etc. It is useful for computing the average rate of increase in profits of a concern, computing the average speed at which a journey has been performed, the average price at which an article is sold.

• In other words, some items of a series are important as compared to the other items in the same series. In such cases, it becomes important to assign different weights to different items. The weighted mean can be used to calculate an average that takes into account the importance of each value with respect to the overall total.

• The weighted mean is similar to an arithmetic mean (the most common type of average), where instead of each of the data points contributing equally to the final average, some data points contribute more than others. The notion of weighted mean plays a role in descriptive statistics and occurs in a more general form in several other areas of mathematics.

• Weighted mean is a mean that is computed with extra weight given to one or more elements of the sample. Thus, arithmetic mean computed by considering relative importance of each items is called weighted arithmetic mean. To give due importance to each item under consideration, we assign number called weight to each item in proportion to its relative importance.

• The term weighted average usually refers to a weighted arithmetic mean, but weighted versions of other means can also be calculated, such as the weighted geometric mean and the weighted harmonic mean.

• A truncated mean or trimmed mean is a statistical measure of central tendency, much like the mean and median. It involves the calculation of the mean after discarding given parts of a probability distribution or sample at the high and low end, and typically discarding an equal amount of both.