**Q20- What do you mean by Measure of Central Tendency and Measures of Dispersion .How it can be calculated.**

Ans - **Measures of Central Tendency:-**

These measures summarize the central point or typical value of a dataset. They give a central value around which other data points are distributed.

**Mean** :The arithmetic average of all data points.

Calculation: Sum of all values divided by the number of values.

Formula: (x1+x2+.....+xn)/n where n is the number of data points.

**Median**: The middle value of a dataset when the values are sorted in

ascending or descending order. If there is an even number of values, the median is the average of the two middle values.Sort the data.

If 'n' is odd, the middle number of the sorted data is the median and if 'n' is even, the average of the two middle numbers is the median.

**Mode**: The value(s) that occur most frequently in the dataset.

**Measures of Dispersion:-**

These measures describe the spread or variability of the data points in a dataset. They indicate how much the data deviates from the central value.

**Range**: The difference between the maximum and minimum values in the dataset.

Range= Maximum value-Minimum Value

**Variance**: The average squared deviation of each data point from the mean. It measures how much the data varies from the mean.

variance= summation of {(xi-mean)^2/n}

**Standard Deviation**: The square root of the variance. It provides a measure of the average distance of each data point from the mean.

S.D.= (variance)^1/2

**Interquartile Range (IQR)**: The range within which the middle 50% of the data lies, calculated as the difference between the third quartile (Q3) and the first quartile (Q1).

IQR=Q3-Q1