

Statistics - ICom Part 1 Statistics Chapter 4 Short Questions Preparation

Q1. Define dispersion, mean deviation and standard deviation.

Ans 1: By dispersion, we mean the extent to which the values are spread out from the average.

Ans 2: The mean deviation is defined as the average of absolute deviations of the values from an average mean or median.

Ans 3: The standard deviation is the positive square root of the mean of the squared deviations of the values from their mean.

Q2. Is it possible that first moment about mean is 10

Ans 1: No, it is not possible that first moment about mean is 10. The first moment about mean is always equal to zero.

Q3. Define absolute dispersion.

Ans 1: The actual variation or dispersion determined by measure of dispersion is called absolute dispersion.

Q4. What do you mean by a symmetrical distribution?

Ans 1: The distribution is called symmetric if the frequency curve is such that the left of curve to its mean is the mirror image of the curve to the right of mean.

Q5. Why standard deviation is preferred over mean deviation.

Ans 1: The mean deviation treats both positive and negative values as positive. It is not capable of algebraic manipulation due to the absolute values. On the other hand, the standard deviation has a definite mathematical meaning and is perfectly adaptable to algebraic treatment.

Q6. Differentiate between inter quartile range and quartile deviation.

Ans 1: Quartile Deviation is the half of inter quartile range. $Q.D = \text{Interquartile range} / 2$

Q7. Define weighted arithmetic mean.

Ans 1: The weighted mean is the mean which takes into account the weight of each value.

Q8. Define Kurtosis.

Ans 1: Kurtosis is the degree of peakedness of a distribution usually taken relative to a normal distribution.

Q9. When the distribution is Leptokurtic,

Ans 1: If the value of $b_2 = m_4 / m_2^2$ is greater than 3 then the distribution is leptokurtic.

Q10. What is symmetry and skewness?

Ans 1: If the values equidistant from the mean have equal frequencies, that the distribution is called the symmetrical distribution. Lack of symmetry is called skewness.
