WORKSHEET 3 STATISTICS ASSIGNMENT-3

ANS. NO.1 (B)

ANS.NO.2 (C)

ANS.NO.3 (A)

ANS.NO.4 (A)

ANS.NO.5 (B)

ANS.NO.6 (B)

ANS.NO.7 (B)

ANS.NO.8 (D)

ANS.NO.9 (A)

ANS.NO.10

In statistics and probability theory, the Bayes' theorem (also known as the Bayes' rule) is a mathematical formula used to determine the conditional probability of events. Essentially, the Bayes' theorem describes the probability of an event based on prior knowledge of the conditions that might be relevant to the event.

The theorem is named after English statistician, Thomas Bayes, who discovered the formula in 1763. It is considered the foundation of the special statistical inference approach called the Bayes' inference.

Formula for Bayes' Theorem

$$P(A/B)=\frac{P(B/A)P(A)}{P(B)}$$

ANS.NO.11

A z-score describes the position of a raw score in terms of its distance from the mean, when measured in standard deviation units. The z-score is positive if the value lies above the mean and negative if it lies below the mean.

It is also known as a standard score, because it allows comparison of scores on different kinds of variables by standardizing the distribution. A standard normal distribution is a normally shaped distribution with a mean of 0 and a standard deviation of 1.

ANS.NO.12

A *t* **test** is a statistical test that is used to compare the means of two groups. It is often used in hypothesis testing to determine whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another.

ANS.NO.13

In statistics, a percentile is a term that describes how a score compares to other scores from the same set. It is commonly expressed as the percentage of values in a set of data scores that fall below a given value.

ANS.NO.14

Analysis of Variance (ANOVA) is a statistical formula used to compare variances across the means (or average) of different groups. A range of scenarios use it to determine if there is any difference between the means of different groups.

ANS.NO.15

ANOVA is helpful for testing three or more variables. It is similar to multiple two-sample t-tests. However, it results in less type I errors and is appropriate for a range of issues. ANOVA groups differences by comparing the means of each group and includes spreading out the variance into diverse sources.