**STATISTICS– WORKSHEET 3**

Solution:1 B

Solution:2 C

Solution:3 A

Solution:4 A

Solution:5 C

Solution:6 B

Solution:7 B

Solution:8 D

Solution:9 A

**Solution:10** In statistics and probability theory, the Bayes’ theorem 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.

**Solution:11** A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean. If a Z-score is 0, it indicates that the data point's score is identical to the mean score. A Z-score of 1.0 would indicate a value that is one standard deviation from the mean. Z-scores may be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean.

**Solution: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.

**Solution:13** Percentiles are used to understand and interpret data. They indicate the values below which a certain percentage of the data in a data set is found.

**Solution:14** Analysis of variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study.

**Solution:15** A specialist may, for example, test students from different universities. To check whether students from one of the schools reliably outperform students from different schools. In a business application, an R&D scientist may test two unique procedures for making an item. To check whether one procedure is better than the other as far as cost-effectiveness.

The kind of ANOVA test utilized relies upon various components. It is applied when information should be experimental. Examination of variance is utilized if there is no access to statistical software resulting in expressing ANOVA by hand. It is easy to utilize and most appropriate for little examples. With numerous experimental plans, the example sizes must be the equivalent for the different factor level combinations.

ANOVA is useful for testing at least three factors. It is like numerous two-example t-tests. However, it brings about less type I mistake and is proper for a scope of issues. ANOVA groups differentiate by looking at the methods for each group and incorporate spreading out the variation into different sources. It is utilized with subjects, test groups, among groups, and in groups.