STATISTICS WORKSHEET-3

1. Which of the following is the correct formula for total variation?

Ans: b) Total Variation = Residual Variation + Regression Variation

2. Collection of exchangeable binary outcomes for the same covariate data are called outcomes.

Ans: c) binomial

3. How many outcomes are possible with Bernoulli trial?

Ans: a) 2

4. If Ho is true and we reject it is called

Ans: a) Type-I error

5. Level of significance is also called:

Ans: b) Size of the test

6. The chance of rejecting a true hypothesis decreases when sample size is:

Ans: d) None

7. Which of the following testing is concerned with making decisions using data?

Ans: b) Hypothesis

8. What is the purpose of multiple testing in statistical inference?

Ans: d) All of the mentioned

9. Normalized data are centred at and have units equal to standard deviations of the original data

Ans: a) 0

10. What Is Bayes' Theorem?

Ans: 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. It is considered the foundation of the special statistical inference approach called the Bayes' inference.

The Bayes' theorem is also used in various disciplines, with medicine and pharmacology as the most notable examples. In addition, the theorem is commonly employed in different fields of finance. Some of the applications include but are not limited to, modeling the risk of lending money to borrowers or forecasting the probability of the success of an investment.

11. What is z-score?

Ans: A z-score gives you an idea of how far from the mean a data point is**.** But more technically it's a measure of how many standard deviations below or above the population mean a raw score .

A z-score can be placed on a normal distribution curve. Z-scores range from -3 standard deviations (which would fall to the far left of the normal distribution curve) up to +3 standard deviations (which would fall to the far right of the normal distribution curve). In order to use a z-score, you need to know the mean μ and also the population standard deviation σ.

12. What is t-test?

Ans: A t-test is an inferential statistic used to determine if there is a significant difference between the means of two groups and how they are related. T-tests are used when the data sets follow a normal distribution and have unknown variances, like the data set recorded from flipping a coin 100 times. The t-test is a test used for hypothesis testing in statistics and uses the t-statistic, the t-distribution values, and the degrees of freedom to determine statistical significance.

13. What is percentile?

Ans: The percentile formula determines the performance of a person over others. The percentile formula is used in finding where a student stands in the test compared to other candidates. A percentile is a number where a certain percentage of scores fall below the given number.

14. What is ANOVA?

Ans: 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.

15. How can ANOVA help?

Ans: ANOVA is helpful for testing three or more variables. It is similar to multiple two-sample t-tests. However, it results in fewer 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.