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: a) Power of the test

6. The chance of rejecting a true hypothesis decreases when sample size is:
Ans: b) Increase

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 conditional probability of an event, based on the occurrence of another event, is equal to the likelihood of the second event given the first event multiplied by the probability of the first event. Bayes theorem is also known as the formula for the probability of 'causes'.

11. What is z-score?

Ans: 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. Z-scores may be positive or negative, positive value indicating the score is above the mean and a negative value indicating the score is below the mean. If it is 0, it is identical to the mean score. If it is 1, indicates one standard deviation from the mean.

12. What is t-test?

Ans: A t-test is a statistical test that compared the means of two samples. It is used in hypothesis testing, with a null hypothesis that the difference in group means is zero and an alternative hypothesis that the difference in group means is different from zero. A t-test can only be used when comparing the means of two groups.

13. What is percentile?

Ans: A percentile is the value at a particular rank. Percentile is a term that shows how a score compares to other scores from the same set. Percentiles are used to understand and interpret data. Percentiles are frequently used to understand test scores and biometric measurements.

14. What is ANOVA?

Ans: Analysis of variance(ANOVA) is an analysis tool used in statistics that splits an observed aggregate variablility found inside a data set into two parts.

Systematic Factors

Random Factors

The ANOVA test allows a comparison of more than two groups at the same time to determine whether a relationship exists between them.

15. How can ANOVA help?

Ans: ANOVA is used to test differences among multiple means without increasing the Typr I error. As the number of groups increased, the number pair comparisons increases substainally and calculations become overwhelming very quickly. ANOVA puts all the data into one F number and gives us one P to test the null hypothesis.