**STATISTICS WORKSHEET-3**

**Q1 to Q9 have only one correct answer. Choose the correct option to answer your question.**

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 c) Level of confidence**

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 centered at and have units equal to standard deviations of the original data

**Ans. a) 0**

**Q10and Q15 are subjective answer type questions, Answer them in your own words briefly.**

10. What Is Bayes' Theorem?

**Ans. It is the probability of an event, based on the occurrences of another event, is equal to the likelihood of the second event.**

11. What is z-score?

**Ans. Z-score is a value used to describe the normal distribution. It is also used in removing outliers. Z-score is also known as standard score gives us an idea of how far a data point is from the mean.**

12. What is t-test?

**Ans. t-test is a statistically significant test for the hypothesis testing when the sample size is small and the population parameter is unknown. T-test take only one sample.**

13. What is percentile?

Ans. A **value on a scale of one hundred that indicates the percent of a distribution that is equal to or below it.**

14. What is ANOVA?

**Ans. If we want to test more than one samples then we will use ANOVA test.Analysis of variance (ANOVA) is a collection of statistical models and their associated estimation procedures (such as the "variation" among and between groups) used to analyze the differences among means.**

15. How can ANOVA help?

**Ans. ANOVA can also be used in feature selection process in machine learning. It helps us to compare how different groups are different from each other and allows us to see if any two groups are statistically similar or not**