

## **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?

a) Total Variation = Residual Variation – Regression Variation b) Total Variation = Residual Variation + Regression Variation c) Total Variation = Residual Variation \* Regression Variation d) All of the mentioned

ANS:- **Total Variation = Residual Variation +Regression Variation**

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

a) random b) direct c) binomial d) none of the mentioned

ANS:- **Binomial Outcomes**

3. How many outcomes are possible with Bernoulli trial?

a) 2 b) 3 c) 4 d) None of the mentioned

ANS:- **2**

4. If  $H_0$  is true and we reject it is called

a) Type-I error b) Type-II error c) Standard error d) Sampling error

ANS:- **Type – I error**

5. Level of significance is also called:

a) Power of the test b) Size of the test c) Level of confidence d) Confidence coefficient

ANS:- **Power of the test**

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

a) Decrease b) Increase c) Both of them d) None

ANS:- **Increase**

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

a) Probability b) Hypothesis c) Causal d) None of the mentioned

ANS:- **Hypothesis**

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

a) Minimize errors b) Minimize false positives c) Minimize false negatives d) All of the mentioned

ANS:- **All of the above**

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

a) 0 b) 5 c) 1 d)

ANS:- 0

Q10 and Q15 are subjective answer type questions, Answer them in your own words briefly.

10. What Is Bayes' Theorem?

ANS:- **Bayes Theorem is a formula for probability of occurrences of an outcome in updated or additional evidence. It is also known as Conditional Probability. It uses previous results to incorporate current data. Posterior probability is taken into consideration before making new predictions.**

11. What is z-score?

ANS:- **Z- Score is the statistical value that determines the relationship between the mean and other values.**

12. What is t-test?

ANS:- **It is an Inferential Statistics where the difference of mean of two different data are related together and how they are different is calculated.**

13. What is percentile?

ANS:- **Percentile is the comparison of scores. How much is the score of one data in comparison to whole data. Percentile = number of value/total number of values X 100**

14. What is ANOVA?

ANS:- **Analysis of Variance, it tests the difference of means means of two categorical data with the help of variance.**

15. How can ANOVA help?

ANS:- **Anova is used basically to check the comparison of more than two data at the same time therefore it reduces time and improves productivity. It usually reduces false positive error or type I error therefore giving true assumptions.**