

### 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
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
3. How many outcomes are possible with Bernoulli trial?
  - a) 2**
  - b) 3
  - c) 4
  - d) None of the mentioned
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
5. Level of significance is also called:
  - a) Power of the test
  - b) Size of the test
  - c) Level of confidence**
  - d) Confidence coefficient
6. The chance of rejecting a true hypothesis decreases when sample size is:
  - a) Decrease**
  - b) Increase
  - c) Both of them
  - d) None
7. Which of the following testing is concerned with making decisions using data?
  - a) Probability
  - b) Hypothesis**
  - c) Causal
  - d) None of the mentioned
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

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

- a) 0
- b) 5
- c) 1
- d) 10

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

10. What Is Bayes' Theorem?

It is a mathematical formula used to determine the conditional probability of events.

11. What is z-score?

A Z-score is an indicator of how closely a value relates to the mean of a set of values. Z-score is quantified by the standard deviations from the mean.

12. What is t-test?

T-test is the final statistical tool for determining differences between sample means and the target values. Two types are there, One sample t-test and two sample t-test.

13. What is percentile?

They indicate the values below which a certain percentage of the data in a data set is found.

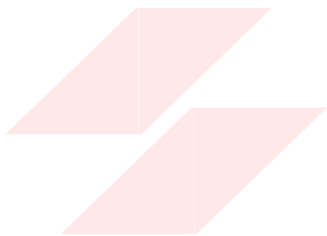
14. What is ANOVA?

ANOVA means ANalysis Of Variance. It is calculated by F-value or F-score.

$$F\text{-Score} = \frac{\text{Sample mean between the Groups}}{\text{Sample mean within the group}}$$

15. How can ANOVA help?

It is a statistical tool that is used to check if the means of two or more groups are significantly different from each other.



# FLIP ROBO