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?
   1. Total Variation = Residual Variation – Regression Variation
   2. Total Variation = Residual Variation + Regression Variation
   3. Total Variation = Residual Variation \* Regression Variation
   4. All of the mentioned
2. Collection of exchangeable binary outcomes for the same covariate data are called outcomes.
   1. random
   2. direct
   3. binomial
   4. none of the mentioned
3. How many outcomes are possible with Bernoulli trial?
   1. 2
   2. 3
   3. 4



* 1. None of the mentioned

1. If Ho is true and we reject it is called
   1. Type-I error
   2. Type-II error
   3. Standard error
   4. Sampling error
2. Level of significance is also called:
   1. Power of the test
   2. Size of the test
   3. Level of confidence
   4. Confidence coefficient
3. The chance of rejecting a true hypothesis decreases when sample size is:
   1. Decrease
   2. Increase
   3. Both of them
   4. None
4. Which of the following testing is concerned with making decisions using data?
   1. Probability
   2. Hypothesis
   3. Causal
   4. None of the mentioned
5. What is the purpose of multiple testing in statistical inference?
   1. Minimize errors
   2. Minimize false positives
   3. Minimize false negatives
   4. All of the mentioned
6. Normalized data are centred at and have units equal to standard deviations of the original data
   1. 0
   2. 5
   3. 1
   4. 10

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

1. What Is Bayes' Theorem?

Ans) Bayes’ Theorem is the Conditional probability of occurrence of an event based on previous knowledge of the conditions related to the event.

1. What is z-score?

Ans) It is a numerical measurement that describes a value’s relationship to the mean of the group of values.

1. What is t-test?

Ans) t-test is a statistical test used in hypothesis testing to compare the means of two groups and hence determine the relationship and the effect.

1. What is percentile?

Ans) Percentile is a measure in statistics on a scale of 100 which indicates the value below which a given percentage of observations in a group observation belongs.

1. What is ANOVA?

Ans) ANOVA or Analysis of Variation is the statistical method in which the variation in a set of observations is split into distinct components to determine if there is a statistically significant difference between observations.

1. How can ANOVA help?

Ans) ANOVA is a statistical test used to analyze the difference between the means of more than two groups and provides the Overall test of equality of group means. It also reduces the experimental error to a great extent.

