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 b) 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 c) binomial

3. How many outcomes are possible with Bernoulli trial?
a) 2
b) 3
c) 4
d) None of the mentioned

ANS a) 2

4. If Ho is true and we reject it is called
a) Type-I error
b) Type-II error
c) Standard error
d) Sampling error

ANS a) 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 a) 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 b) 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 b) 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 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

ANS a) 0

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

10. What Is Bayes' Theorem?
11. What is z-score?
12. What is t-test?
13. What is percentile?
14. What is ANOVA?
15. How can ANOVA help?

10. What Is Bayes' Theorem?
ANS Bayes' Theorem describes the probability of occurrence of an event related to any condition. It is also considered for the case of conditional probability.

11. What is z-score?
ANS Z-score indicates how much a given value differs from the standard deviation. The Z-score, or standard score, is the number of standard deviations a given data point lies above or below mean. A Z-score tells you where the score lies on a normal distribution curve

12. What is t-test?
ANS A t-test is an inferential statistic used to determine if there is a significant difference between the means of two groups and how they are related. t-tests are used when the data sets follow a normal distribution and have unknown variances. t-test is a statistical test that is used to compare the means of two groups.

13. What is percentile?
ANS A percentile is a term that describes how a score compares to other scores from the same set. It is commonly expressed as the percentage of values in a set of data scores that fall below a given value.

14. What is ANOVA?
ANS Analysis of variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not.

15. How can ANOVA help?
ANS ANOVA helps to compare how different groups are different from each other and allows you to see if any two groups are statistically similar.