FLIP ROBO

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

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

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

Ans: a

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

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

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

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

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

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

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

10. What Is Bayes' Theorem?

Bayes' Theorem states that the conditional probability of an event, based on the occurrence of another event, is equal to the likelihood of the second event given the first event multiplied by the probability of the first event.

11. What is z-score?

A z score is a type of statistical measurement that gives an idea of how far a raw score is from the mean of a distribution. A z score is used in a z test for hypothesis testing. It is also used in prediction intervals to determine the probability of a random variable falling between a range of values.

$$z = \frac{x - \mu}{\sigma}$$

12. What is t-test?

A t-test is a statistical test that compares the means of two samples. It is used in hypothesis testing, with a null hypothesis that the difference in group means is zero and an alternate hypothesis that the difference in group means is different from zero.

13. What is percentile?

A percentile is a comparison score between a particular score and the scores of the rest of a group.

14. What is ANOVA?

An ANOVA test is a type of statistical test used to determine if there is a statistically significant difference between two or more categorical groups by testing for differences of means using variance.

15. How can ANOVA help?

- Reduce the experimental error to a great extent.
- We can reduce or increase some tests.
- Suitable for laboratory tests.