

WORKSHEET - 3

STATISTICS

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 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. 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. b)

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

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)

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

10. What Is Bayes' Theorem?

Ans. It describes the probability of occurrence of an event related to any condition.

11. What is z-score?

Ans. Z-score can be defined as the number of standard deviations from the mean. Z-scores range from -3 standard deviations up to +3 standards.

12. What is t-test?

Ans. A t test is a statistical test that is used to compare the means of two groups. It is often used in hypothesis testing to determine whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another.

13. What is percentile?

Ans. A percentile is defined as the percentage of values found under the specific values. Percentiles are mostly used in the ranking system.

14. What is ANOVA?

Ans. Analysis of Variance is used to compare differences of means among more than two groups

15. How can ANOVA help?

Ans. ANOVA help to identify relationships between different variables in a data set.