STATISTICS WORKSHEET_3

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- b) Size 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?

Ans- Baye's Theorem is an extension to condition law of probability and Conditional Probability is the probability of an event, given that another event has occurred.
Bayes's theorem enables revision of original probabilities with the new information.
Bayes's rule is important as it allows us to compute the conditional probability P(A|B) from the inverse conditional probability P(B|A).

11. What is z-score?

Ans- Z-score is a numerical measurement that describes a values relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean. z-score is equal to 0 means datapoints score is identical to the mean score and if it is equal to 1 means it is 1 standard deviation from the mean

12. What is t-test?

Ans- A t-test is a type of inferential statistics used to determine if there is a significant difference between the means of two groups which may be related in certain features. t-test is used as a hypothesis testing tool which allows testing of an assumption applicable to population.

13. What is percentile?

Ans-Percentile is a score below which a given percentage of score in its frequency distribution falls or a score at or below which a given percentage falls

14. What is ANOVA?

Ans- Analysis of Variance, Anova is a way to find out if survey or experiment results are significant.
They help us to figure out if you need to reject null hypothesis or accept alternate hypothesis. It is a statistical technique used to determine whether there are any statistically significant differences between the means

15. How can ANOVA help?

Ans- We can compare the means one by one using t-test for difference of mean. Anova is helpful for testing three or more variables. It results in fewer type I errors and is appropriate for a range of issues. Anova groups differences by comparing the means of each group and includes spreading out the variance into diverse sources.