Statistics

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 -a

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 : 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

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

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 : b

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

10. What Is Bayes' Theorem?

describes the probability of an event, based on prior knowledge of conditions that might be related to the event.

For example, if the risk of developing health problems is known to increase with age, Bayes' theorem allows the risk to an individual of a known age to be assessed more accurately (by conditioning it on their age) than simply assuming that the individual is typical of the population as a whole.

mathematically stated as

$P(A|B) = P(B|A)P(A)$

P(B)

where A and B are events and P(B) not equal to zero

P(A|B) is a conditional probability: the probability of event A occurring given that B is true.

P(B|A) is also a conditional probability: the probability of event B occurring given that A is true.

11. What is z-score?

A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean. if a Z-score is 0, it indicates that the data point's score is identical to the mean score. a Z-score is 1 indicate that the value is one standard deviation from the mean. Z-scores can be positive or negative. positive indicates that the score is above the mean, negative indicates that the score is below mean.

12. What is t-test?

t-test is the final statistical measure for determining differences between two means that may or may not be related. the testing uses randomly selected samples from the two categories or groups. it is a statistical method in which samples are chosen randomly and there is no perfect normal distribution.

13. What is percentile?

In statistics, a k-th percentile is a score below which a given percentile k of scores in its frequency distribution falls or a score at or below which a given percentile falls.

example: the 50th percentile (the median) is a score below which or at or below which 50% of the scores in the distribution may be found.

14. What is ANOVA?

Analysis of Variance is to test for differences among the means of the population by examining the amount of variation within each sample, relative to the amount of variation between the samples.

15. How can ANOVA help

ANOVA is helpful for testing three or more variables. it is similar to multiple two-sample t-tests. however, it results in fewer type I errors and is appropriate for range of issues. ANOVA groups differences by comparing the means of each group and includes spreading out the variance into diverse sources.