

### STATISTICS WORKSHEET-3

q.n1 . Which of the following is the correct formula for total variation?

Ans (b) Total Variation = Residual Variation + Regression Variation

q.n2. Collection of exchangeable binary outcomes for the same covariate data are called outcomes

Ans (c) binomial

Q.n3 How many outcomes are possible with Bernoulli trial?

Ans.(a) 2

q.n4 If  $H_0$  is true and we reject it is called

Ans. TYPE-1 error

q.n5 5. Level of significance is also called:

Ans (a) power of the test

q.n6 the chance of rejecting a true hypothesis decreases when sample size is:

Ans (b) increase

q.n7 Which of the following testing is concerned with making decisions using data?

Ans (b) Hypothesis

q.n8 What is the purpose of multiple testing in statistical inference?

Ans (d) All of the mentioned

q.n9 Normalized data are centred at and have units equal to standard deviations of the original data

Ans (a) 0

q.n10 What Is Bayes' Theorem?

Ans Bayes' Theorem, named after 18th-century British mathematician Thomas Bayes, is a mathematical formula for determining [conditional probability](#). Conditional probability is the likelihood of an outcome occurring, based on a previous outcome having occurred in similar circumstances. Bayes' theorem provides a way to revise existing predictions or theories (update probabilities) given new or additional evidence.

In finance, Bayes' Theorem can be used to rate the [risk](#) of lending money to potential borrowers. The theorem is also called Bayes' Rule or Bayes' Law and is the foundation of the field of Bayesian statistics.

q.n.11 What is z-score?

Ans 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

q.n12 What is t-test?

Ans 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

q.n13 What is percentile?

Ans A percentile is **a comparison score between a particular score and the scores of the rest of a group**. It shows the percentage of scores that a particular score surpassed. For example, if you score 75 points on a test, and are ranked in the 85<sup>th</sup> percentile, it means that the score 75 is higher than 85% of the scores.

q.n14 What is ANOVA?

Ans Analysis of variance, or ANOVA, is **a statistical method that separates observed variance data into different components to use for additional tests**. A one-way ANOVA is used for three or more groups of data, to gain information about the relationship between the dependent and independent variables

q.n15 How can ANOVA help?

Ans 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 a range of issues. ANOVA groups differences by comparing the means of each group and includes spreading out the variance into diverse sources