STATISTICS ASSIGNMENT-3

Ans1) Total Variation = Residual Variation + Regression Variation (b)

Ans2) Binomial (c)

Ans3) 2 (a)

Ans4) Type-1 error (a)

Ans5) Level of confidence (c)

Ans6) None (d)

Ans7) Hypothesis (b)

Ans8) All of the mentioned (d)

Ans9) 0 (a)

Ans10) <u>Bayes' Theorem</u>: It states 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.

$$P(A|B) = \frac{P(B|A)\ P(A)}{P(B)}$$

Ans11) <u>Z-score</u>: It is a numerical measurement that describes a value's relationship to the mean of a group of values. It is measured in the terms of standard deviations from the mean. If the z-score is 0, it indicates that the data point's score is identical to the mean score. A Z-score of 1.0 would indicate a value that is one standard deviation from the mean. Z-scores may be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean.

Ans12) <u>t-test</u>: It is a statistical test that compares the mean of two samples. It is used in hypothesis testing, with a null hypothesis that the difference in the

group means is zero and an alternate hypothesis that the difference in the group means is different from zero.

Ans13) <u>Percentile</u>: It is a score below which a given percentage of scores in its frequency distribution fall (exclusive definition) or a score at or below which a given percentage fall (inclusive definition). For example, the 50th percentile (the median) is the score below which 50% (exclusive) or at or below which (inclusive) 50% of the scores in the distribution may be found.

Ans14) <u>Analysis of Variance (ANOVA)</u>: It is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study.

Ans15) The one-way ANOVA can help you know whether or not there are significant differences between the means of your independent variables (such as the first example: age, sex, income). When you understand how each independent variable's mean is different from the others, you can begin to understand which of them has a connection to your dependent variable (landing page clicks), and begin to learn what is driving that behavior.