STATISTICS WORKSHEET-3

# 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?
   1. Total Variation = Residual Variation – Regression Variation
   2. Total Variation = Residual Variation + Regression Variation
   3. Total Variation = Residual Variation \* Regression Variation
   4. All of the mentioned

Ans:- b

1. Collection of exchangeable binary outcomes for the same covariate data are called outcomes.
   1. random
   2. direct
   3. binomial
   4. none of the mentioned

Ans:- b

1. How many outcomes are possible with Bernoulli trial?
   1. 2
   2. 3
   3. 4



* 1. None of the mentioned

Ans:- a

1. If Ho is true and we reject it is called
   1. Type-I error
   2. Type-II error
   3. Standard error
   4. Sampling error

Ans:- a

1. Level of significance is also called:
   1. Power of the test
   2. Size of the test
   3. Level of confidence
   4. Confidence coefficient

Ans:- c

1. The chance of rejecting a true hypothesis decreases when sample size is:
   1. Decrease
   2. Increase
   3. Both of them
   4. None

Ans:- a

1. Which of the following testing is concerned with making decisions using data?
   1. Probability
   2. Hypothesis
   3. Causal
   4. None of the mentioned

Ans:- b

1. What is the purpose of multiple testing in statistical inference?
   1. Minimize errors
   2. Minimize false positives
   3. Minimize false negatives
   4. All of the mentioned

Ans:- d

1. Normalized data are centred at and have units equal to standard deviations of the original data
   1. 0
   2. 5
   3. 1
   4. 10

Ans:- a

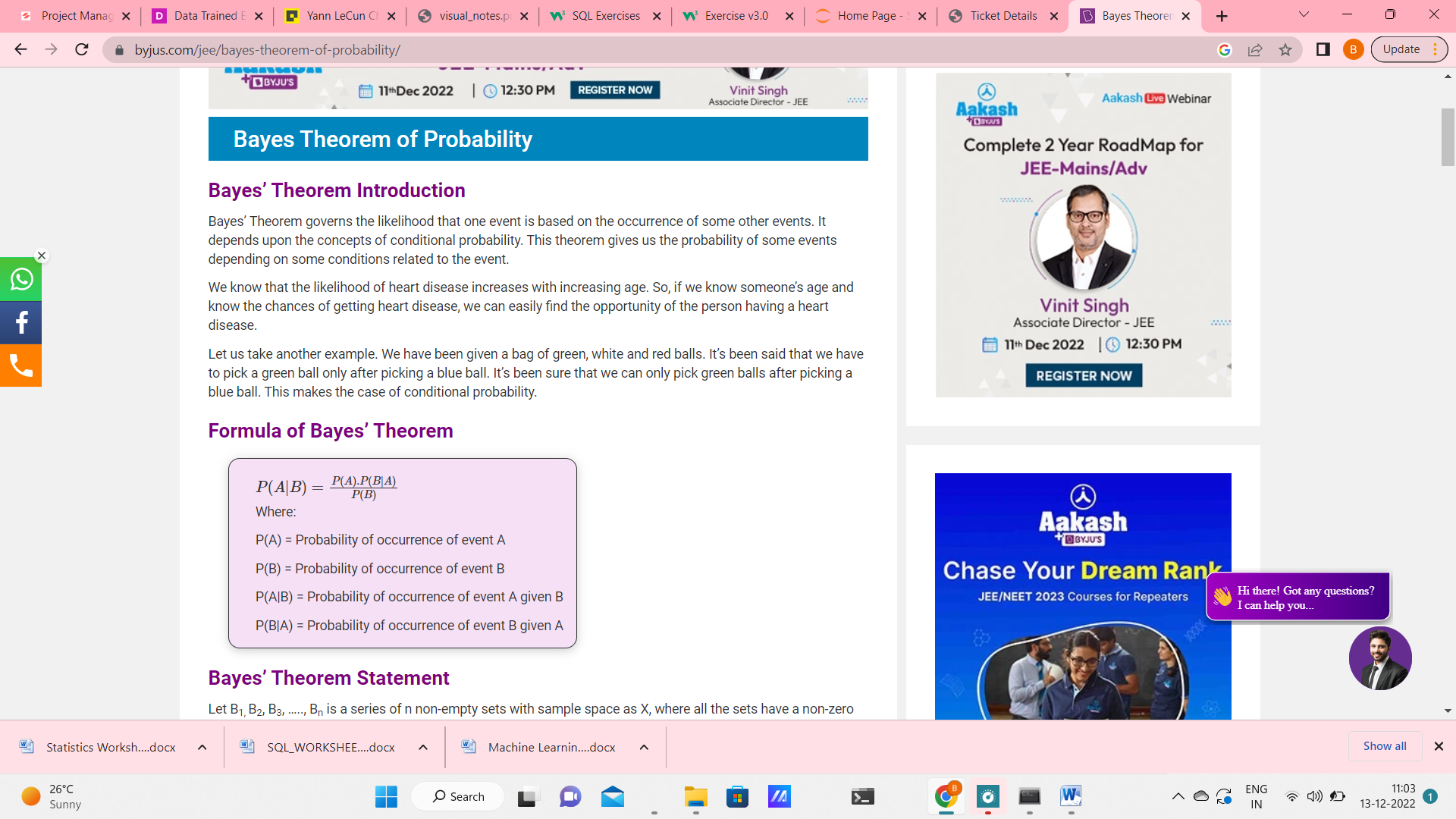
# Q10and Q15 are subjective answer type questions, Answer them in your own words briefly.

1. What Is Bayes' Theorem?

Ans:- Bayes’ Theorem governs the likelihood that one event is based on the occurrence of some other events. It depends upon the concepts of conditional probability. This theorem gives us the probability of some events depending on some conditions related to the event.

We know that the likelihood of heart disease increases with increasing age. So, if we know someone’s age and know the chances of getting heart disease, we can easily find the opportunity of the person having a heart disease.

According to this theorem



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](https://www.investopedia.com/terms/s/standarddeviation.asp) 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 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.

1. What is t-test?

A ***t*test** is a [statistical test](https://www.scribbr.com/statistics/statistical-tests/) that is used to compare the means of two groups. It is often used in [hypothesis testing](https://www.scribbr.com/statistics/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.

1. What is percentile?

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 th percentile, it means that the score 75 is higher than 85% of the scores.

1. What is ANOVA?

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.

1. How can ANOVA help?

ANOVA is a method to determine if the mean of groups are different. In inferential statistics, we use samples to infer properties of populations. Statistical tests like ANOVA help us justify if sample results are applicable to populations.

