

Statistics Assignment

Q1 to Q9 have only one correct answer. Choose the correct option to answer your question.

1. Bernoulli random variables take (only) the values 1 and 0.
 - a) True
 - b) False

Ans- a) True

2. Which of the following theorem states that the distribution of averages of iid variables, properly normalized, becomes that of a standard normal as the sample size increases?
 - a) Central Limit Theorem
 - b) Central Mean Theorem
 - c) Centroid Limit Theorem
 - d) All of the mentioned

Ans- a) Central Limit Theorem

3. Which of the following is incorrect with respect to use of Poisson distribution?
 - a) Modeling event/time data
 - b) Modeling bounded count data
 - c) Modeling contingency tables
 - d) All of the mentioned

Ans- b) Modeling bounded count data

4. Point out the correct statement.
 - a) The exponent of a normally distributed random variables follows what is called the log- normal distribution
 - b) Sums of normally distributed random variables are again normally distributed even if the variables are dependent
 - c) The square of a standard normal random variable follows what is called chi-squared distribution
 - d) All of the mentioned

Ans- d) All of the mentioned

5. _____ random variables are used to model rates.
 - a) Empirical
 - b) Binomial
 - c) Poisson
 - d) All of the mentioned

Ans- c) Poisson

Statistics Assignment

6. Usually replacing the standard error by its estimated value does change the CLT.
- a) True
 - b) False

Ans- a) True

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. Normalized data are centered at _____ and have units equal to standard deviations of the original data.
- a) 0
 - b) 5
 - c) 1
 - d) 10

Ans- a) 0

9. Which of the following statement is incorrect with respect to outliers?
- a) Outliers can have varying degrees of influence
 - b) Outliers can be the result of spurious or real processes
 - c) Outliers cannot conform to the regression relationship
 - d) None of the mentioned

Ans- c) Outliers cannot conform to the regression relationship

Q10 and Q15 are subjective answer type questions, Answer them in your own words briefly.

10. What do you understand by the term Normal Distribution?

Ans- It is a Distribution where the mean, median and mode are almost equal and it looks like a bell shaped curve. In normal distribution the mean is zero and the standard deviation is 1.

11. How do you handle missing data? What imputation techniques do you recommend?

Ans- First we need to find out the missing data in a dataset and then we need to categorize them into different categories. Then we need to use the imputation techniques to fill the missing data. Some of the imputation techniques used widely are mean imputation, regression imputation and substitution.

Statistics Assignment

12. What is A/B testing?

Ans- A/B testing (also known as bucket testing or split-run testing) is a user experience research methodology. A/B tests consist of a randomized experiment with two variants, A and B. It includes application of statistical hypothesis testing or "two-sample hypothesis testing" as used in the field of statistics.

13. Is mean imputation of missing data acceptable practice?

Ans- No, it is not an acceptable practice but Mean imputation is typically considered terrible practice since it ignores feature correlation.

14. What is linear regression in statistics?

Ans- Linear regression analysis is used to predict the value of a variable based on the value of another variable. The variable you want to predict is called the dependent variable. The variable you are using to predict the other variable's value is called the independent variable.

15. What are the various branches of statistics?

Ans- the various branches of Statistics are

- 1. Descriptive Statistics**
- 2. Inferential Statistics**