**Statistics– WORKSHEET 4**

1. Bernoulli random variables take (only) the values 1 and 0.

Answer: 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?

Answer: a) Central Limit Theorem

3. Which of the following is incorrect with respect to use of Poisson distribution?

Answer: b) Modeling bounded count data

4. Point out the correct statement.

Answer: d) All of the mentioned

5. \_\_\_\_\_\_\_\_\_\_ random variables are used to model rates.

Answer: c) Poisson

6. 10. Usually replacing the standard error by its estimated value does change the CLT.

Answer: a) True

7. 1. Which of the following testing is concerned with making decisions using data?

Answer: b) Hypothesis

8. 4. Normalized data are centered at \_\_\_ and have units equal to standard deviations of the original data.

Answer: a) 0

9. Which of the following statement is incorrect with respect to outliers?

Answer: c) Outliers cannot conform to the regression relationship

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

Answer: Normal distribution is the distribution which forms symmetric bell shape curve, it haves mean and median value as same and lies at the centre of the distribution.

Normal distribution have the standard deviation values, where 1standard deviation covers approx. 68% of data, in standard deviation 2 it covers 95% of the data, and in 3rd standard deviation it covers almost 99% of the data.

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

Answer: To handle the missing data various techniques, we can use mean, median, mode values to fill missing values, also we can use random values to replace missing values. Also we can replace missing values with the outliers values. The use of imputation technique depends on the nature of the data, if value is missing in big amount we can use random sampling and if values is missing is less then we can use mean, median, mode.

12. What is A/B testing

Answer: [A/B testing](https://www.invespcro.com/blog/what-is-ab-testing-split-testing/) refers to the experiments where two or more variations of the same webpage are compared against each other by displaying them to real-time visitors to determine which one performs better for a given goal. A/B testing is not limited by web pages only, you can A/B test your emails, popups, sign up forms, apps and more. Nowadays, most MarTech software comes with an A/B testing function built-in.

13. Is mean imputation of missing data acceptable practice?

Answer: Yes, we can use mean imputation to handle missing values, but if we are using mean imputation where data is missing in a big amount it may It distorts the relation of the most frequent label.

14. What is linear regression in statistics?

Answer: Linear regression is used to study the linear relationship between a dependent variable Y (blood pressure) and one or more independent variables X (age, weight, sex). ... Performing a linear regression makes sense only if the relationship is linear. Other methods must be used to study nonlinear relationships.

15. What are the various branches of statistics?

Answer: The two main branches of statistics are descriptive statistics and inferential statistics. Both of these are employed in scientific analysis of data and both are equally important for the student of statistics.