

- 1) a) True
- 2) a) Central Limit Theorem
- 3) b) Modeling bounded count data
- 4) d) All of the mentioned
- 5) c) Poisson
- 6) b) False
- 7) b) Hypothesis
- 8) a) 0
- 9) c) Outliers cannot conform to the regression relationship

10) Normal distribution is a probability distribution that is symmetric about the mean, showing that data near the mean are more frequent in occurrence than data far from the mean. In graph form, normal distribution will appear as a bell curve.

11) **Missing Completely At Random (MCAR):** When missing values are randomly distributed across all observations, then we consider the data to be missing completely at random.

**Missing At Random (MAR):** The key difference between MCAR and MAR is that under MAR the data is not missing randomly across all observations, but is missing randomly only within sub-samples of data.

**Not Missing At Random (NMAR):** When the missing data has a structure to it, we cannot treat it as missing at random.

#### **Techniques**

1. Mean or Median Imputation
2. Multivariate Imputation by Chained Equations (MICE)
3. Random Forest

12) A/B 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) The process of replacing null values in a data collection with the data's mean is known as mean imputation.

It is not acceptable as it ignores correlation and decreases variance which results in less accuracy of the data.

14) linear regression is a linear approach for modelling the relationship between a scalar response and one or more explanatory variables (also known as dependent and independent variables).

15) Data collection, descriptive statistics and inferential statistics