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

Ans.:- 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.:- 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.:- 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.:- All of the mentioned

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

Ans.:- Poisson

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

Ans.:- False

7. 1. Which of the following testing is concerned with making decisions using data?
a) Probability
b) Hypothesis
c) Causal
d) None of the mentioned

Ans.:- Hypothesis

8. 4. 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.:- 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.:- Outliers cannot conform to the regression relationship

11. How do you handle missing data? What imputation techniques do you recommend?
Answer: There are a lot of techniques to treat missing value. I am trying to think what is the best way to organize some of the most commonly used methods.
1-Ignore the records with missing values:-When the percentage of records with missing values is small, we could ignore those records.
2-Mean , Median ,Mode Imputation:- In this imputation technique replace missing data with statistical estimates of the missing values. Mean, Median or Mode can be used as imputation value.

3-Model imputation:- fix missing values by applying machine learning to that dataset.

I am recommend Model imputation techniques for handle missing data

12. What is A/B testing?
Answer: A/B testing is a basic randomized control experiment. It is a way to compare the two versions of a variable to find out which performs better in a controlled environment.
It is a hypothetical testing methodology for making decisions that estimate population parameters based on sample statistics. The population refers to all the customers buying your product, while the sample refers to the number of customers that participated in the test.

13. Is mean imputation of missing data acceptable practice?
Answer: No because of Mean imputation is typically considered terrible practice since it ignores feature correlation. Consider the following scenario. mean imputation decreases the variance of our data while increasing bias. As a result of the reduced variance, the model is less accurate and the confidence interval is narrower.

14. What is linear regression in statistics?
Answer: Linear regression quantifies the relationship between two variables by fitting a linear equation to observed data. One variable is considered to be an explanatory variable, and the other is considered to be a dependent variable.
A linear regression line has an equation of the form $Y = a + bX$
where
X is the explanatory variable.
Y is the dependent variable.
b is the slope of the line.
a is the intercept

15. What are the various branches of statistics?
Answer: Statistics may be divided into two main branches:
(1) Descriptive Statistics:- Descriptive statistics deals with the collection of data, its presentation in various forms, such as tables, graphs and diagrams and finding averages and other measures which would describe the data.