1.Differentitate between inferential statistics and descriptive statistics?

A) the data are taken from the sample and allows you to generalize the population. which means making inference about something. So, statistical inference means, making inference about the population.

Descriptive statistics are used to describe and summarize the data from a research sample.  Descriptive statistics summarize the features or characteristics of a data set

2.**Differentitate between population and sample?**

A)The entire group that you want to draw conclusions from the whole data is called population.

The specific group of data that you will collect from the whole data is called sample.the size of the sample is always less than total size of the population**.**

**3.) What is hypothesis? differentiate between null and alternate hypothesis?**

A)Hypothesis testing is systematic procedure for dediding wheather the results of research study to support a particular theory which applies to a population.The null hypothesis of a test always predicts no effect or no relationship between variables, while the alternative hypothesis states your research prediction of an effect or relationship

**4)What is central limit theorem?**

**A)** The Central Limit Theorem states that the sampling distribution of the mean of any independent, random variable will be normal or nearly normal, if the sample size is large enough

For example if we take a sufficiently large sample size from a population with a finite level of variance, the mean of all samples from that population will be roughly equal to the population mean

**5)Differentiate between type – I and type -II errors?**

**A)** An error is statistical observation done by the researcher for the data. When thetype I error (false-positive) occurs if an investigator rejects a null hypothesis that is actually true in the population; a type II error (false-negative) occurs if the investigator fails to reject a null hypothesis that is actually false in the population.it depends on the null hypothesis value which can be decided as type-I or type-II.

6)**What is Liner regression?**

A) Linear regression **is a data analysis technique that predicts the value of unknown data by using another related and known data value.** It mathematically models the unknown or dependent variable and the known or independent variable as a linear equation.

There are two types of liner regression:

Simple Linear Regression: A linear regression model with one independent and one dependent variable.

Multiple Linear Regression: A linear regression model with more than one independent variable and one dependent variable.

7.**What are the assumptions required for Linear regression?**

A) Liner regression Assumptions:

1.linear relationship between Dependent variable and each of the in-dependent variables.

2.Mean of 0 and constant variance of residuals.

3.no.multi-collinearity among independent variables.

4.  The variance of residual is the same for any value of X.

5. Observations are independent of each other.