Statistics Assignment 5

1. How are you going to figure out the average heights of all the trees in Karnataka?

2. What is hypothesis testing and how does it work?

3. Explain the differences between Alpha and Beta errors. Which inaccuracy is the most hazardous?

4. What is the significance of the p-value?

5. What is the Probability Distribution Function and how does it work?

1. All the trees of the state Karnataka is called population of size N.

So we have to find the population mean i.e. μ. Now it is not possible to collect all the data i.e. the height of all the trees in the state. Therefore to calculate the average height of all the trees we have to take a sample from the population. The sample size is n and n<N. Then we can find the sample mean and we can do some

test, called hypothesis testing to find that whether the sample mean is equal to the population mean or not.

2. Hypothesis testing is used to assess the plausibility of a hypothesis by using sample data. The test provides evidence concerning the plausibility of the hypothesis, given the data. Statistical analysis test a hypothesis is by measuring and examining a random sample of the population being analyzed. Hypothesis testing allows the researcher to determine whether the data from the sample is significant.

3. Specially two errors may occur in hypothesis test. Alpha error occurs when the null hypothesis is erroneously rejected and beta error occurs when the null hypothesis is wrongly retained.

 Alpha errors are generally considered more serious than beta error.

4. A p-value is a measure of the probability that an observed difference could have occured just by random chance. The lower the p-value, the greater the statistical significance of the observed difference.

5. Probability density function are a statistical measure used to gauge the likely outcome of a discrete value e.g. price of a stock. Probability density functions are plotted on a graph typically resembling a bell curve, with the probability of the outcomes lying below the curve.