Assignment 6

1. What is a Cumulative Distribution Function, and how does it work?

Ans. The cumulative distribution function is used to describe the probability distribution of random variables. It can be used to describe the probability for a discrete, continuous or mixed variable. It is obtained by summing up the probability density function and getting the cumulative probability for a random variable.

2. When should we use a t-test vs a z-test?

Ans. A T-test is appropriate when you are handling small samples (n < 30) while a Z-test is appropriate when you are handling moderate to large samples (n > 30). 3. T-test is more adaptable than Z-test since Z-test will often require certain conditions to be reliable.

3. How do we examine two category characteristics?

Ans. The researcher collects the data using one of the qualitative or quantitative methods of data collection. Data analysis highly depends on whether the data is a qualitative data or a quantitative data.

4. Explain the concept of Chebyshev's Inequality.

Ans. Chebyshev’s inequality is a probability theory that guarantees that within a specified range or distance from the mean, for a large range of probability distributions, no more than a specific fraction of values will be present.

5. Explain the concept of Pareto Distribution.

Ans. The Pareto Principle, also known as the 80/20 Rule, The Law of the Vital Few and The Principle of Factor Sparsity, illustrates that 80% of effects arise from 20% of the causes – or in lamens terms – 20% of your actions/activities will account for 80% of your results/outcomes. The Pareto distribution serves to show that the level of inputs and outputs is not always equal.