5). Difference between Descriptive Statistics and Inferential Statistics

Aspect	Descriptive Statistics	Inferential Statistics
Scope	Summarise data from a sample	Make predictions or generalisations about a population
Objective	Describe properties of data	Use data to test hypotheses or make estimates
Methods	Use measures like mean and standard deviation	Use methods like hypothesis testing and confidence intervals
Data Use	Deals only with the data at hand	Uses sample data to estimate population parameters
Assumptions	Requires fewer assumptions	Often relies on assumptions about data distribution
Analysis	Involves visualizing data	Involves statistical models
Outcome	Provides a summary	Provides conclusions beyond the data
Uncertainty	Does not deal with uncertainty	Includes uncertainty and error measures
Decision Making	Aids in understanding data	Helps in decision making based on data
Examples	Calculating average grades	Predicting election results