

“Probability and Statistics”

1. Introduction

- Nature of Statistics
- Descriptive and Inferential Statistics
- Population and Sample
- Summation Notation

2. Statistical Description of Data

- Tabular Representation: Frequency Distribution Table (Relative and Percentage), Cumulative Frequency Distribution Table (Relative and Percentage)
- Graphical Representation: Frequency (Histogram, Polygon, Curve)

3. Statistical Measure of Data

- Measures of Central Tendency: Mean (Arithmetic, Geometric, Harmonic, Quadratic), Median, Mode
- Measures of Dispersion (or Variation): Mean Deviation, Variance, Standard Deviation, Coefficient of Variation

4. Probability

- Some Basic Concepts: Random Experiment, Sample Space, Event
- Some Algebra of Events (Sets), Sets Operation
- Counting Sample Points: Multiplication Rule, Permutation, Combination
- The Classical Definition of Probability
- Sample Spaces with or without Equally Likely Outcomes
- The Probability Set Function and Axioms
- Theorems on Probability
- Conditional Probability and Independence

- Bayes Theorem