

### 3.5.B - BUSINESS STATISTICS - I

(For students who have not studied Statistics at PU I & II / XI & XII classes)

**Objectives:** To train the students of commerce to become familiar with the elementary tools of statistics which are used in the analysis of a collected data.

Unit	Topics	No of periods
I	<b>Introduction:</b> Meaning and Definition of Statistics, Functions and Limitation of Statistics. Basic concepts - Population, Sample, Variable, Attribute, Nominal and Ordinal Scale. Primary and Secondary data, Censes and Sampling Methods. Methods of Sampling- Simple Random Sampling, Stratified Sampling and Systematic Sampling with Merits and Demerits.	10
II	<b>Diagrams and Graphical Representation-</b> Meaning, needs, general rules of construction. Simple Bar Diagram, Component, Multiple, Percentage and Pie-Chart. Graphs- Histogram, Frequency Polygon, Frequency Curve and Ogive Curve.	10
III	<b>Uni-Variate Data Analysis:</b> Definition of Partition Values- Quartiles, Deciles and Percentiles, with graphical location of Partition Values and examples. Concept of dispersion, Absolute and relative measures of Range, Quartile Deviation, Mean Deviation, Standard Deviation, Co-efficient of variation. Definition of Skewness, Measures of Skewness Karl–Pearson and Bowleys Coefficient of skewness. Example based on theory.	10
IV	<b>Probability and Expectation:</b> Introduction, definitions-Deterministic experiment, Basic terms- Random experiment, Sample space, event, null event, complementary events, exhaustive event, equally likely, mutually exclusive events, independent events. Meaning and definitions of Classical, Empirical and Axiomatic approaches. Statement of addition and multiplication theorems and examples based on theory. Meaning and definition of Random Variable, types- Discrete and Continues r.v. Mathematical Expectation, mean and Variance of r.v. Properties of Random Variables $E(a)$ , $E(ax)$ , $E(ax + b)$ , $V(a)$ , $V(ax)$ and $V(ax + b)$ , addition and multiplication theorem with examples based on theory.	10
V	<b>Time Series Analysis:</b> meaning and Definition of time series, uses. Components of time series. Calculation of trend values. Method of moving averages (3, 4 and 5 yearly). Method of least squares (Fitting of straight line only). With examples based on theory.	10

**Suggested Readings:**

- 01 Business Statistics by Prof. Raj Mohan
- 02 Business Statistics by S. C. Gupta
- 03 Business Statistics by S. P. Gupta
- 04 Business Statistics by J K Sharma