

STATISTICS

Part-I (Class-XI)

Distribution of Marks:

Part-II (Class-XII)

Theory: 85

Theory: 85

Total Marks: 200

Practical: 30

Marks: 85	CLASS-XI (PART-I)	Time:3:00 Hours
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Syllabus

Chapter:1 INTRODUCTION TO STATISTICS

Introduction, Definitions, Notations, Importance of Statistics in Various Disciplines, Social Sciences, Plant Sciences, Physical Sciences, Medical Sciences, Variables, Descriptive and Inferential Statistics, Sources of Data

Chapter:2 REPRESENTATION OF DATA

Introduction, Classification, Tabulation, Construction of tables, Frequency distribution, Cumulative Frequency Distribution, Graphic Representation of Data, Simple Bar Diagram, Multiple Bar Diagram, Sub-Divided Bar Diagram, Pie Diagram, Histogram, Frequency polygon and frequency curve, Scatter Plots, Bivariate Frequency Distribution.

Chapter:3 MEASURES OF LOCATION

Introduction, Arithmetic Mean and Weighted Mean, Updating or Correcting the mean, Calculation of A.M. by coding / short-cut method, Merits and Demerits of Arithmetic mean, Geometric Mean, Properties of Geometric mean, Merits and Demerits of geometric mean, Harmonic Mean, Merits and Demerits of Harmonic mean, Properties of Harmonic mean, Median, Properties of Median, Merits and Demerits of Median, Quantiles, Mode, Properties of Mode, Merits and Demerits of Mode, Empirical Relationship between Mean, Median and Mode, Selecting a Suitable Measure of Central Tendency.

Chapter:4 MEASURES OF DISPERSION

Introduction, Range, Merits and Demerits of Range, Quartile Deviation, Merits and Demerits of Quartile Deviation, Mean Deviation, Merits and Demerits of Mean Deviation, Properties of Mean Deviation, The Variance, Merits and Demerits of Variance, Standard Deviation, Properties of the Variance and standard Deviation, Co-efficient of Variation and other Relative Measures, Moments, Moment about Mean, Moment about an Arbitrary Value, Moments for grouped Data, Sheppard's Correction for Grouping Error, Skewness.

Chapter:5 INDEX NUMBERS

Introduction, Types of Index Numbers, Limitations of Index Numbers, Use of Index Numbers, Construction of price Index Numbers, Unweighted and Weighted Index Numbers, Consumer Price Index (CPI) and Wholesale Price Index (WPI), Construction of CPI, Sensitive Price Indicator (SPI).

Chapter:6 PROBABILITY

Introduction, Permutations, Combinations, Probability, Conditional Probability.

Chapter:7 RANDOM VARIABLES

Introduction, Random Numbers and their Generation, Application of Random Numbers, Concept of Random Variables and their Construction from Different Fields, Discrete and Continuous Random Variables.

Chapter:8 PROBABILITY DISTRIBUTIONS

Introduction, Probability Mass Function, Probability Density Function, Simple Univariate Discrete and Continuous Distributions, Properties of Probability Mass Function and Probability Density Function, Application, Drawing of Probability Mass Function and Probability Density Function, Expectation and Variance of the simple discrete Random Variable, Properties of Expectation, Distribution Function.

Chapter:9 BINOMIAL AND HYPERGEOMETRIC PROBABILITY DISTRIBUTION

Introduction, Binomial Probability Distribution, Mean and Variance of the Binomial Distribution, Hypergeometric Distribution and Hypergeometric Experiment, Properties, Hypergeometric Probability Distribution,

List of Practicals for Class XI (Part-I)

Topics:

1. Presentation of data
2. Measure of Location
3. Measure of description
4. Index Numbers
5. Probability
6. Random Variables
7. Discrete Probability distribution
8. Binomial and Hypergeometric Probability distribution

Recommended Book: Statistics (Part-I)

Authors: 1) Dr. Faqir Muhammad 2) Mr. Amjad Mehmood

Editor: Mazhar Hayat, SS, Punjab Textbook Board, Lahore

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For Punjab Textbook Board, Lahore

Marks : 85	CLASS-XII (PART – II)	Time: 3:00 Hours
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Syllabus

Chapter:10 NORMAL DISTRIBUTION

Normal Distribution, Standard Normal Random Variable, Standard Normal Distribution, Standard Normal Cumulative Distribution Function, De-standardizing, Quantiles of Standard Normal Distribution, Use of Standard Normal Tables for any Normal Distribution, Finding the Values of μ or σ or both.

Chapter:11 SAMPLING TECHNIQUES AND SAMPLING DISTRIBUTIONS

Population (Or Universe), Sample, Sampling design, Non-probability (Non-random) Sampling, Probability (Random) Sampling, Simple Random Sampling, Stratified Sampling, Errors, Simple Random Sampling and Sampling Distributions, Sampling Distribution of a Statistic, Sampling Distributions from General Populations, Sampling Distribution of the Sample Mean, $\bar{X}$, Sampling Distribution of the Difference Between two Sample Means, $X_1 - X_2$, Sampling Distribution of Sample Proportion, P , Sampling Distribution of the Difference Between two Sample Proportions, $P_1 - P_2$, Other Sampling Distributions, Sampling Distribution of the Sample Variance, S^2

Chapter:12 ESTIMATION

Statistical Estimation, Point Estimation of a Parameter, Unbiasedness, Best Estimator, Pooled Estimators from two Samples, Interval Estimation, Confidence interval for Population Mean, μ , Confidence interval for Population Proportion of Success, π , Comparative Studies, Confidence interval for Difference between two Population Means, $\mu_1 - \mu_2$, Confidence interval for difference between two Population Proportions, $\pi_1 - \pi_2$

Chapter:13 HYPOTHESIS TESTING

The Elements of a Test of Hypothesis, Test of Hypothesis about a Population Mean, μ , Test of Hypothesis about a Population Proportion, π , Test of Hypothesis about the difference between two Population Means-independent Samples, Inference about the difference between two Population Means-Dependent Samples, Test of Hypothesis about the Difference between two Population Proportions, $\pi_1 - \pi_2$

Chapter:14 SIMPLE LINEAR REGRESSION AND CORRELATION

Relations between Variables, Regression analysis, Curve fitting, Simple Linear Regression, The Simple Linear Regression model, Simple Linear correlation, Correlation analysis

Chapter:15 ASSOCIATION

Multinomial Populations, Attribute (Qualitative Variable), Independence of Attributes, Association of Attributes, Two dimensional count Data: Contingency Table, Test for Statistical Independence, Rank correlation,

Chapter:16 ANALYSIS OF TIME SERIES

Time Series, Components of a time Series, Analysis of time Series, Estimation of secular trend

Chapter:17 ORIENTATION OF COMPUTERS

Introduction to Computer, History of Computer, Types of computers, Classification of Computers, Hardware and Software, Hardware components of a personal Computer, Input Devices and Output Devices, System Software, Operating System, Application Software, Programming Languages, Language Processors and Number system, How Computers Represent Data, Binary System as a foundation of Computer Programming

List of Practicals for Class XII (Part-II)**Topics:**

Normal distribution

Sampling

Estimation

Testing of Hypothesis

Correlation

Association

Time series

Recommended Book: Statistics (Part-II)

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