

BUSINESS MATHEMATICS AND STATISTICS

SECOND YEAR Paper - II

Objectives

To enable the students to learn basic concepts of determinants & Matrices;

To learn the concept, features, types of Set Theory; concept, relations, types and application of functions;

To develop an understanding about the concept, methods and applications of Limit, continuity,

To enable the students to learn the concept of methods and applications of Limit and continuity, Derivation and Integration

To help the students in learning the concept, types and calculation of Average; and

To enable the students to understand the concept, objectives, features and applications of σ measures of dispersion

Course Inputs

Unit-I Business Mathematics:

Determinants - Upto third order, Minors, Co-factors, properties and Cramer's rule Matrices: Meaning, Definition, Types, Algebra of matrices, Solving Linear Equation Problems through Matrics. Set Theory: Meaning, Definition, Types and Operations (Union & Intersection) Functions: Meaning and Relations of Functions, Types of Functions and Classification of Functions (excluding Trigonometric Functions)

Unit -II Calculus

Calculus - Limit & Continuity - Meaning, Definition, Methods of Finding Limits, Differentiation
Calculus - II Integration up to substitution

Unit-III Measure of Central Tendency

Meaning, Objectives, Types of Averages (Mathematical & Positional Averages) Mathematical Averages : AM, GM, HM (Simple & Weighted) Positional Averages : Median, Mode, Quartile, Deciles and Percentiles Relationship of AM, GM, HM, Median, Mode

Unit - IV Measure of Dispersion

Meaning, Objectives, Characteristics of dispersion, Measures of Dispersion, (Absolute and Relative) Positional Dispersion : Range, Inter Quartile Range, Quartile Deviation. Mathematical Dispersion : Mean Deviation, Standard Deviation & Co-efficient of variation.

Unit-V Project work and viva Suggested outline for Project Work

Case study on Application of Matrix for solving real life business problems.

Report on concept and Rules regarding Matrix, Determining, inverse of a matrix by using Elementary Operation Methods and Co-factor Method.

Find out the Averages (Mean, Median and Mode) by taking sample from Number of students from any class and Marks secured by them in their annual examination as two variables.

Calculate the Mean or Average deviation and co-efficient of Variation from Mean / Median / Mode from π by taking example of Life Time in No. of years of two different T.V. sets namely Model A and Model B to find out the average life of each model of these TV and the model having greater uniformly or variability.

Calculating Standard Deviation and its co-efficient along with its coefficient of variation from the data relating to the Profit or Loss made by Engineering Companies in Odisha during the year 201-15.