

CONTENTS

Chapter	Subject	Page
---------	---------	------

UNIT-I

1. MATRICES

- 1.1 Meaning
- 1.2 Types of Matrices
- 1.3 Algebra of Matrices
- 1.4 Transpose of a Matrix
- 1.5 Determinant of a Square Matrix
- 1.6 Adjoint of a Square Matrix
- 1.7 Inverse of a Matrix
- 1.8 System of Linear Equation
- 1.9 Rank of a Matrix
- 1.10 Input-Output Analysis (Leontief's Model)
- 1.11 Types of Model
- 1.12 Procedure of Solving an Open Model
- 1.13 Solution of Closed Model
- 1.14 Advantages of Input-output Analysis
- 1.15 Limitations of input-output analysis

2. DETERMINANT

- 2.1 Meaning
- 2.2 Determinant of order three
- 2.3 Higher Order Determinant
- 2.4 Minors and Cofactors
- 2.5 Adjugate (Adjoint) of a Determinant
- 2.6 Alternative Methods (For determining the value of determinant)
- 2.7 Properties of Determinant
- 2.8 Multiplication of Determinants (row by row)
- 2.9 Solution of Linear Equation (Cramer's Rule)

Chapter	Subject
UNIT-II	

3. FUNCTION

- 3.1 Introduction
- 3.2 Definition
- 3.3 How to identify function
- 3.4 Domain and range of a function
- 3.5 Classification of function
- 3.6 Graph of functions
- 3.7 Even and odd function
- 3.8 Inverse of a function
- 3.9 Composit function
- 3.10 Algebra of functions
- 3.11 Value of a function

4. LIMIT AND CONTINUITY

- 4.1 Concept of Limit
- 4.2 Theorems on Limit
- 4.3 Methods of Finding Limit
- 4.4 Some Standard Limits
- 4.5 Continuity of A function
- 4.6 Analytical Method

5. DIFFERENTIATION

- 5.1 Meaning of Derivative
- 5.2 Geometrical Interpretation of Derivative
- 5.3 Derivatives from first Principle
- 5.4 Standard forms
- 5.5 Rule of Addition and Subtraction
- 5.6 Product Rule
- 5.7 Division Rule
- 5.8 Derivative of the Function of A Function (Chain Rule)
- 5.9 Implicit Differentiation
- 5.10 Derivative of Parametric function
- 5.11 Logarithmic Differentiation
- 5.12 Derivative of One Function w.r.t. Another Function
- 5.13 Derivative of Higher Order / Successive differentiation

Chapter	Subject
6.	MAXIMA AND MINIMA
	6.1 Increasing function and decreasing function
	6.2 Relative Maxima and Minima
	6.3 Point of Inflexion
	6.4 Methods of Finding Maxima and Minima
	6.5 Application of Maxima and Minima
UNIT-III	
7.	INTEGRATION
	7.1 Meaning, theorem and Standard Formulae
	7.2 Integration by Substitution
	7.3 Integration by Parts
	7.4 Integral in the form of $\int e^x[f(x)+f'(x)]dx$
	7.5 Some standard Integrals
	7.6 Integration of quadratic form
	7.7 Integration by Partial Fractions
8.	APPLICATION OF INTEGRATION
	8.1 Definite Integrals
	8.2 Area under a Curve
	8.3 Managerial Application of Integration
	8.4 Consumer Surplus
	8.5 Producer's Surplus
	8.6 Capital formation
9.	LEARNING CURVE
	9.1 Meaning and causes of learning curve
	9.2 Learning Curve Ratio
	9.3 Learning Curve Model
	9.4 Graphical presentation of LC
	9.5 Applications (uses) of Learning Curve
	9.6 Limitations of Learning Curve
UNIT-IV	
10.	MATHEMATICS FOR FINANCE
	10.1 Introduction
	10.2 Methods of adjusting cash flow

Chapter	Subject
11.	ANNUITY
11.1	Introduction 10.1
11.2	Terms used 10.1
11.3	Types of Annuities 10.2
11.4	Symbols used 10.2
11.5	Formulae used 10.2
11.6	Application of Annuity 10.4
11.7	Worked out Illustration 10.6

UNIT-V

12	LINEAR PROGRAMMING
12.1	Introduction
12.2	Requirements of LP
12.3	Advantages of LP
12.4	Disadvantages of LP
12.5	Applications of LP
12.6	Formulation of LP Model
12.7	Solution of LP Problem
12.8	Method of Solution
12.9	Procedure Under Graphic Method
12.10	Some Exceptional Cases
12.11	LPP : Simplex Method
12.12	Computational Procedure for Maximization
12.13	Computational Procedure for Minimization
12.14	Problem with constraints having = sign
12.15	Maximization with Mixed Constraint
12.16	Minimization with Mixed Constraint
12.17	Typical Cases
12.18	Illustration on Degeneracy
12.19	Duality in Linear Programming
12.20	Advantages of Duality
12.21	Linear programming Vrs. Duality
12.22	Conversion of LLP into Duality
12.23	Solution Under Duality
12.24	Solution by LP method and deriving the result under duality

TABLES

