

C O N T E N T S

Basic Mathematics

Module 1 Preliminaries

Sets and set operations; relations; functions and their properties, Number systems.

Module 2 Functions of One Variable

Types of functions-constant, polynomial, rational, exponential, logarithmic; Graphs and graphs of functions; Limit and continuity of functions; Limit theorems.

Module 3 Derivative of a Function

Rate of change and derivative; Derivative and slope of a curve; Continuity and differentiability of a function; Rules of differentiation for a function of one variable, Application-Relationship between total, average and marginal functions.

Module 4 Functions of two or more Independent Variables

Partial differentiation techniques; Geometric interpretation of partial derivatives; partial derivatives; partial derivatives in Economics, Elasticity of a function—demand and cost elasticity, cross and partial elasticity.

Module 5 Matrices & Determinants

Matrices: Concept, types, matrix algebra, transpose, inverse, rank; Determinants: concept, properties, solving problems using properties of determinants, solution to a system of equations—Cramer's rule and matrix inversion method.