



**DSE-2
(Minor)**

[4 Credits]

**Business Mathematics
(CM203M)**

UNIT-I

Ratio and Proportion, Indices, Logarithms: Inverse and compound ratio, Properties of proportion, Law of indices; Fundamentals laws of Logarithm, Anti-logarithm

Equations and Linear Inequalities: Simple Equations, Simultaneous Equations in two unknowns- Cross Multiplication and Elimination method, Constructions of Quadratic Equations, Problems in Quadratic Equations, Linear Inequalities in one variable and the solution space

UNIT-II

Basic concepts of Permutations and Combinations: Fundamental Principles of counting, The Factorial, Permutations, results, circular Permutations, Permutations with restrictions, Combinations, Standard results

Sequence and Series: Sequence, Series, Arithmetic Progressions, Geometric progressions, Geometric Mean

Sets, Relations and Functions, basics of Limits and Continuity functions: Venn diagram, Product of sets, Relations and functions, domain and range of functions, types of functions, Concept of Limit, Theorems on Limits, Continuity

UNIT III

Mathematics of Finance: Simple Interest and Compound Interest, Effective rate of Interest, Annuity, Future Value, Present Value, Sinking Funds, Perpetuity, Net Present Value, Nominal Rate of Return, CAGR

Logical Reasoning: Number Series, Coding and Decoding, Odd Man Out, Direction tests, Seating arrangements, Blood relations

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UNIT IV



Basic concepts of Differential and Integral Calculus (excluding Trigonometric Functions): Derivative, Implicit function, Parametric Equation, Logarithmic Differentiation, Basic idea about higher order differentiation, Geometric interpretation of Derivative

Applications of Differential calculus and Integral Calculus in business and economics (simple problems)

Suggested Readings:

1. Alpha C. Chiang: *An Introduction to Mathematical Economics*, Prentice Hall Inc.
2. N. K. Nag: *Business Mathematics*, New Central Book Agency: Kolkata
3. N. D. Vohra: *Business Mathematics and Statistics*, McGraw Hill Education: New Delhi
4. J. K. Singh: *Business Mathematics*, Himalaya Publishing House: New Delhi.

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