



- AI & Future Skills Integration

CLASS-12

Syllabus and Exam Pattern

● SECTION A: RELATIONS & FUNCTIONS (10%)

- Types of relations
- Types of functions
- Domain and range
- Composition of functions (basic)

◆ SECTION B: CALCULUS (30%)

1. Continuity & Differentiability

- Limits (basic understanding)
- Differentiation of functions

2. Applications of Derivatives

- Rate of change
- Increasing/decreasing functions
- Maxima and minima

3. Integrals (Basic)

- Indefinite integrals (introductory)
 - Definite integrals (basic application)
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● SECTION C: ALGEBRA (15%)

1. Matrices

- Types and operations

2. Determinants

- Evaluation
 - Applications (area, system of equations)
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● SECTION D: VECTOR ALGEBRA & 3D GEOMETRY (15%)

1. Vectors

- Basic operations
- Dot product

2. Three-Dimensional Geometry

- Direction ratios
 - Equation of line (basic)
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◆ SECTION E: LINEAR PROGRAMMING (5%)

- Graphical method
 - Feasible region
 - Optimization (basic problems)
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● SECTION F: PROBABILITY (10%)

- Conditional probability
 - Basic distributions (introductory)
 - Application-based problems
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● SECTION G: APPLICATION OF MATHEMATICS (5%)

- Real-life problems involving calculus, probability, and algebra
 - Basic financial mathematics (interest, optimization context)
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SECTION H: SMART LOGIC & AI AWARENESS (5%)

(No specific study required)

1. Analytical Thinking

- Pattern-based reasoning
- Multi-step logical problems

2. AI Concepts (Conceptual)

- Data-driven decision making
 - Predictive thinking (basic idea)
 - Applications of AI in real-world fields (finance, healthcare, etc.)
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SECTION I: ADVANCED REASONING & HOTS (5%)

- Case-study based questions
 - Multi-concept problems
 - Higher-order analytical reasoning
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Weightage Structure

Section	Area	Weightage
A	Relations & Functions	10%
B	Calculus	30%
C	Algebra	15%
D	Vectors & 3D Geometry	15%
E	Linear Programming	5%
F	Probability	10%
G	Application of Mathematics	5%
H	Smart Logic & AI Awareness	5%
I	Advanced Reasoning & HOTS	5%

Total = 100%

EXAM PATTERN

- Mode: Online / Offline (MCQ Based)

- Total Questions: 50
- Total Marks: 50
- Duration: 60 Minutes

Question Distribution:

- Core NCERT Maths: 42 Questions
 - Smart Logic & AI: 4 Questions
 - Advanced Reasoning & HOTS: 4 Questions
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 Important Note

The syllabus is based on NCERT Class 12 Mathematics with a strong focus on application, analytical thinking, and real-world problem solving. The Smart Logic & AI Awareness section is designed to develop future-ready skills without requiring additional preparation.