



**Maharashtra State Board of
Secondary & Higher Secondary School, Pune**

Department of Mathematics

Subject: Mathematics & Statistics (88)

Standard: Twelve

Faculty: Commerce

Syllabus

XII Mathematics Paper-I (Theory & Practical)

Theory Index (Part I)

Sr. No.	Unit/Topic	Weightage
1	Mathematical Logic	08
2	Matrices	08
3	Differentiation	07
4	Applications of Derivatives	09
5	Integration	07
6	Definite Integration	05
7	Application of Definite Integration	04
8	Differential Equation and Applications	10

Practical Index

Sr. No.	Practical's Name
1	Mathematical Logic
2	Finding Inverse of a Matrix
3	Solution of Linear Equations using Matrices
4	Commission, Brokerage, Discount
5	Insurance and Annuity
6	Fitting of Linear Regression
7	Applications of Linear Regression
8	Time Series
9	Index Numbers
10	Increasing and Decreasing Functions
11	Maxima and Minima
12	Applications of Derivatives to Economics
13	Linear Programming Problems
14	Assignment Problems
15	Sequencing
16	Random Variables
17	Binomial Distribution
18	Poisson Distribution
19	Applications of Definite Integration
20	Applications of Differential Equations

Syllabus (Part I)

Sr. No.	Name of the Topic	Scope of Syllabus
1	Mathematical Logic	<ul style="list-style-type: none">• Statement• Logical connectives• Quantifiers and quantified statements• Statement patterns and logical equivalence• Algebra of statements• Venn diagrams
2	Matrices	<ul style="list-style-type: none">• Types of Matrices• Algebra of Matrices• Properties of Matrices• Elementary Transformation• Inverse of Matrix• Application of Matrices
3	Differentiation	<ul style="list-style-type: none">• Derivatives of composite functions.• Derivatives of inverse functions.• Derivatives of logarithmic functions.• Derivatives of implicit function.• Derivatives of parametric functions.• Derivative of second order.
4	Applications of Derivatives	<ul style="list-style-type: none">• Meaning of Derivatives• Increasing and Decreasing Functions.• Maxima and Minima• Application of derivatives to Economics.
5	Integration	<ul style="list-style-type: none">• Method of Substitution• Some Special Integrals• Integration by Parts• Integration by Partial Fraction
6	Definite Integration	<ul style="list-style-type: none">• Definite Integral• Properties of Definite Integral
7	Application of Definite Integration	<ul style="list-style-type: none">• Area of a bounded region
8	Differential Equation and Applications	<ul style="list-style-type: none">• Differential Equation• Ordinary differential equation• Order and degree of a differential equation

		<ul style="list-style-type: none">• Solution of a differential equation• Formation of a differential equation• Applications of differential equations
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