



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

Department of Mathematics

Subject: Mathematics & Statistics (88)

Standard: Eleven

Faculty: Commerce

Syllabus

XI Mathematics Paper-I (Theory & Practical)

Theory Index (Part I)

Sr. No.	Unit/Topic	Weightage
1	Sets and Relations	05
2	Functions	05
3	Complex Numbers	06
4	Sequences and Series	08
5	Locus and Straight Line	08
6	Determinants	08
7	Limits	07
8	Continuity	05
9	Differentiation	06

Practical Index

Sr. No.	Practical's Name
1	Sets and Relations
2	Partition Values
3	Functions
4	Measures of Dispersion
5	Complex Numbers
6	Skewness
7	Bivariate Frequency Distribution
8	Sequences and Series
9	Correlation
10	Locus and Straight Line
11	Applications of Determinants
12	Permutations and Combinations
13	Limits
14	Continuity
15	Probability
16	Linear Inequations
17	Differentiation
18	Applications of Derivatives to Economics
19	Commercial Mathematics : Percentage, Profit and Loss
20	GST, Shares and Dividend

Syllabus (Part I)

Sr. No.	Name of the Topic	Scope of Syllabus
1	Sets and Relations	<ul style="list-style-type: none">• Representation of a Set• Intervals• Types of sets• Operations on sets• Ordered pair• Relations
2	Functions	<ul style="list-style-type: none">• Function, Domain, Co-domain, Range• Types of functions – One-one, Onto• Representation of function• Evaluation of function• Fundamental types of functions• Some special functions
3	Complex Numbers	<ul style="list-style-type: none">• Complex number• Algebra of complex number• Solution of Quadratic equation• Cube roots of unity
4	Sequences and Series	<ul style="list-style-type: none">• Geometric progression (G.P.)• n^{th} term of a G.P.• Sum of n terms of a G.P.• Sum of infinite terms of a G.P.• Sigma notation.
5	Locus and Straight Line	<ul style="list-style-type: none">• Locus• Slope of a line• Perpendicular and parallel lines• Angle between intersecting lines• Equations of lines in different forms:<ul style="list-style-type: none">⇒ Slope point form⇒ Slope intercept form⇒ Two points form⇒ Double intercept form⇒ Normal form⇒ General form• Distance of a point from a line• Distance between parallel lines

6	Determinants	<ul style="list-style-type: none"> • Definition of Determinants • Properties of Determinants • Applications of Determinants • Cramer's Rule • Consistency of linear equations • Area of triangle • Collinearity of three points
7	Limits	<ul style="list-style-type: none"> • Definition of Limit • Algebra of Limits • Evaluation of Limits <ul style="list-style-type: none"> ⇒ Direct Method ⇒ Factorization Method ⇒ Rationalization Method • Limits of Exponential and Logarithmic Functions
8	Continuity	<ul style="list-style-type: none"> • Continuity of a function at a point. • Continuity of a function over an interval.
9	Differentiation	<ul style="list-style-type: none"> • The meaning of rate of change. • Meaning of derivative and the formula associated with it. • Derivatives of some standard functions. • Some applications of derivatives