Mathematics & Statistics (Arts and Science)
Standard XII
Paper II

Chapter 1. DIFFERENTIATION

1. Derivatives of composite functions.
2. Derivatives of composite Inverse functions.
3. Derivatives of composite Implicit functions.
4. Higher order derivatives.
5. Geometrical meaning of Derivative.
6. Logarithmic Differentiation
7. Derivatives of parametric functions.

Chapter 2: APPLICATIONS OF DERIVATIVES

1. Applications of derivatives to Tangents and Normals
2. Approximations
3. Rolle's theorem and Lagrange's mean value theorem.
4. Maxima and Minima
5. Derivative as rate measure.
6. Increasing and decreasing functions.

Chapter 3: INDEFINITE INTEGRATION

1. Definition and properties
2. Different techniques:

i)by substitution
ii)by parts
iii) by partial fractions

Chapter 4. DEFINITE INTEGRATION

1. Definite integral as limit of sum.
2. Fundamental theorem of integral calculus.
3. Methods of evaluation and properties of definite integral.

Chapter 5. APPLICATIONS OF DEFINITE INTEGRATION

1. Area under the curve
2. Area bounded by the curve, axis and given lines.
3. Area between two curves.

Chapter 6: DIFFERENTIAL EQUATIONS

1. Differential equation
2. Formation of Differential equation
3. Types of Differential equation
4. Order and degree of Differential equation
5. Solution of Differential equation
6. Application of Differential equation.

Chapter 7: PROBABILITY DISTRIBUTION

1. Random variables
2. Types of Random variables
3. Probability distribution of Random variables
4. Discrete Random variables
5. Probability mass function
6. Expected values and variance
7. Continuous Random variables
8. Probability density function.
9. Cumulative distribution function.

Chapter 8. BINOMIAL DISTRIBUTION

1. Bernolli trial.
2. Binomial distribution
3. Mean and variance of Binomial distribution.