

CS – 10 : Foundation of Mathematics & Statistics**Objective:**

- To Aware about basic Mathematics and Statistics
- To perform mathematical & statistical operations and manipulations with confidence, speed and accuracy.

Unit : 1**Determinants:**

- Introduction
- 2×2 , 3×3 order determinant
- Cramer's method for solving linear equation(Two and Three Variables)
- Properties of Determinants
- Examples

Unit : 2**Matrices**

- Introduction
- Different types of matrix(square matrix, column matrix, row matrix, Diagonal matrix. Unit matrix, null matrix),
- Transpose of matrix
- Addition, subtraction & multiplication of two matrices
- Adjoint of a square matrix
- Inverse of matrix

Unit : 3**Co-ordinate Geometry**

- Introduction
- Quadrants & Axes
- Distance between two points in R^2 (without proof)
- Section formula(without proof)
- Area of triangle(without proof)
- Typical examples

Set Theory

- Introduction
- Method of representation of a set
- Operation on sets & its properties(with only Logical proof)
- De'Morgan laws with Logical proof
- Difference of two sets
- Cartesian products(up to two sets)
- Typical examples

Unit : 4**Measures of Central Tendency & Dispersion**

- Mean(ungroup data, group data)
- Median(ungroup data, group data)
- Mode(ungroup data, group data)
- Range
- Quartiles
- Standard Deviation
- Typical examples

Unit : 5**Arithmetic & Geometric progression**

- Sequence
- Series
- Arithmetic progression(Definition & Nth term, sum of n terms)
- Geometric progression (Definition & Nth term, sum of n terms)
- Harmonic Progression
- Relation Between AM GM HM (Two Numbers)
- Typical examples

	Class Room	Seminar	Expert Talk	Test	Total
No. Of Lecture	60	05	05	05	75

Reference Books:

No.	Name	Author / Publication
1	Business Mathematics	Sancheti & Kapoor Sultan & Chand
2	Statistical Method	Gupta Sultan & Chand
3	Discrete Mathematical Structures with Applications to Computer Science	J.P. Tremblay & R. Manohar TMH
4	Business Mathematics	V.K. Kapoor
5	Fundamentals of Statistics	S. C. Gupta