

Summer course programme in Mathematics 2016

Course Outline

Algebra

- Arithmetic Progression
- Geometric Progression
- Theory of Quadratic Equation
- Logarithm
- Permutation
- Combination

Matrix and Determinant

- Types of matrices, Transpose of a matrix, symmetric and skew – symmetric matrix.
- Matrix operations – Addition, Subtraction and Multiplication.
- Determinant – concept of minors and co-factors, Expansion of Determinant
- Properties of Determinant.
- Adjoint of matrix, Inverse of a matrix.
- Solutions of system of simultaneous equations – Cramer's rule.
- Solutions of system of simultaneous equations – Martin's rule.

Calculus

- Function -Types, Domain.
- Limit of a function – basic concept, existence, Different evaluation methods, Standard limits.
- Continuity of a function.
- Derivative – geometrical interpretation, first principle formula.
- Standard derivatives, derivative of composite and parametric functions.
- Higher order derivative.

EVALUATION