

Mathematics

B.A.: Optional

MATHEMATICS: OPTIONAL

Outlines of Tests

Paper	Title of Course	Marks
A	Calculus $\frac{1}{2}$ and Algebra $\frac{1}{2}$	100

Syllabi and Courses Of Reading

Limits and Continuity. Differentiation. Successive Differentiation, Taylor's theorem and Taylor's series. Function of several variables. Partial derivatives. Differentials. Total derivative. Implicit functions and their higher order differentiation. Euler's Theorem.

Maxima and Minima of functions of one and two variables.

Methods of Integration. Definition of the definite integral and its geometric interpretation. Differential Equations of first order. Second order differential equations with constant co-efficient.

(Algebra $\frac{1}{2}$):

Difference equations. First and second order homogenous and non-homogeneous system. *Vectors in R^n* : linear dependence, linear dependence, bases. Matrices and basic operations on matrices. Determinants, adjoints and inverses of matrices. Elementary operations on matrices. Equivalence. Rank of a matrix. Matrix solution of systems of linear equations.

Note: Mathematics (Optional) means Mathematics General (Optional), A-Course of Mathematics (Optional) or B-Course of Mathematics (Optional).