Subject Code : NSRCAY1

FIRST ALLIED PAPER – I : NUMERICAL AND STATISTICAL METHODS

UNIT – I

Numerical methods – errors in numerical calculations – transcendental equation – introduction – Bisection method – iteration method – Method of false position – Newton – rapson method.

UNIT – II

Interpolation – Newton's formulae (forward & backward) for interpolation – Lagrange's interpolation formula – simultaneous linear equations – Gauss Elimination and Gauss Jordan methods – Gauss Seidal method.

UNIT – III

Numerical integration – Trapezoidal and Simpson's rule – differential equation – euler, runge-kutta and predictor and corrector methods.

UNIT – IV

Mathematical expectation – variance – covariance – moment generating functions – theoretical distributions – binomial, poission, normal and exponential distributions – MGFS of these distribution – additive properties – recurrence relations for the moment.

UNIT – V

Linear correlation and regression – properties of correlation and regression coefficients – numerical problems for finding the correlation and regression coefficients.

Reference:

1. "Introductory methods of numerical analysis", S.S.Sastry, PHI, New Delhi 1982.
2. M.K.Jain, S.R.K.Iyengar and R.K.Jain "Numerical methods for science and Engineering computation", Wiley Eastern Limited – 2nd edition –1995.
3. Gupta S.C.and Kapoor V.K.-Fundamentals of Statistics – Sultan Chand and Sons – New Delhi (1994).
4. Bajpat A.C.Cal I.M.and Fairdy J.A.Statistical methods for Engineering and Scientists – John Wiley and Sons.