

PAPER-III QUANTITATIVE METHODS

(Questions will be set from each Unit/Section)

- UNIT-I Mathematical Methods** - Concept of of function and types of functions Limit continuity and derivative; Simple ru7les of integration. Deteminants and their basic properties; Solution of simultaneous equations through crammers' rule Concept fo matrix- their thpes, simple operations on matrices, inversion and rank of a matrix.
- UNIT--II Mathematical Methods** - Linear programming- Basic concept; Formulation of a linear programming problem- optimal solution of linear programming through rgaphigical method; Concept of a game ; Strategies - simple and mixed; value of a saddle point solution;
- UNIT-III Statistical Methods** - Meaning assumptions and limtations of simple correlation and regression analysis; pearons' Concept of the least squares and the lines of regression; standard error of estimate Partial and multiple correlation
- UNIT--IV statistical Methods** - Deterministic and non- deterministic experiments: Various types of events - classical and empirical definition of probability: Laws of addition and mutiplication probability and concept of interdependence: Byas' thorem and its application; Elementary concept of random variable probability Expectations, moments and generating functions; properties (without derivations) of Binomial poisson and Normal Distributions.
- UNIT-V Basic Conecept of sampling** - random non-random sampling; Simple random and p.p.s. sampling; Concept of an estimator and its sampling distribution, Desirable properties of and estimator; Formulation of Statistical hypotheses - Null and alternative Goodness of fit Confidence inervals and leave of significance; Hypothesis testing based on Z, t, x2, (Chi-square) and F tests.