

## **PAPER VIIC (Code No. 3308 C)**

### **BUSINESS MATHEMATICS**

#### **Objective**

The objective of this course is to enable the students to have such minimum knowledge of Mathematics as is applicable to business and economic situations.

#### **COURSE CONTENTS**

##### **UNIT-I**

Calculus (Problems and theorems involving trigonometrical ratios are not to be done). Differentiation: Partial derivatives up to second order; Homogeneity of functions and Euler's theorem; Total differentials; Differentiation of implicit function with the help of total differentials. Maxima and Minima; Cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint. Integration: Integration as anti-derivative process; Standard forms; Methods of integration-by substitution, by parts, and by use of partial fractions; Definite integration; Finding areas in simple cases; Consumers and producers surplus; Nature of Commodities Learning Curve; Leontiff Input-Output Model.

##### **UNIT-II**

Matrices and Determinants: Definition of a matrix; Types of Matrices; Algebra of matrices; Properties of determinants., Calculation of varies of determinants up to third order-, Adjoint of a matrix, elementary row or column operations; Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.

##### **UNIT-III**

Linear Programming-Formulation of LPP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints, Cases having no solution, multiple solutions, unbounded solution and redundant constraints.

##### **UNIT-IV**

Simplex Method - Solution of problems up to three variables, including cases of mixed constraints; Duality; Transportation Problem.

##### **UNIT-V**

Compound Interest and Annuities: Certain different types of interest rates; Concept of present value and amount of a sum; Types of annuities; Present value and amount of an annuity, including the case of continuous compounding; Valuation of simple loans and debentures; Problems relating to sinking funds.

#### **Suggested Readings**

1. Alien R.G.D.: Basic Mathematics; Maemillan, New Delhi.
2. Dowling, E.T.: Mathematics for Economics; Schaum Series, McGraw Hill London.
3. Holden: Mathematics for Business and Economics; Macmillan India, New Delhi.
4. Kapoor, V.K.:Business Mathematics; Sultan Chand & Sons, Delhi.
5. Loomba, Paul: Linear Programming; Tata McGraw Hill, New Delhi.
6. Soni, R.S.: Business Mathematics; Pitarnber Publishing House.
7. Vohra, N.D.: Quantitative Techniques in Management; Tata McGraw Hill New Delhi.