

To be effective from 2016-2017
REVISED SULLABUS B.A. SEMESTER-3
STATISTICS ELECTIVE – I PAPER 201 (PAPER 3)
MATHEMATICAL ECONOMICS

1 Function and Limit: **(25%)**

Concept of function of a single variable (Linear, Quadratic and exponential function only) Domain, Co-domain and Range of a Function. Types of a function. Simple example of a function.

Concept of Limit, Rules of limit (Without proof) Simple examples of limit.

2. Differentiation: **(25%)**

Concept of derivative of a real function, Rules of derivative without proof. Derivative of the function of types: $ax+b$, $ax+bx+c$, $(ax+b)(cx+d)$, $ax+b/cx+d$, e^x , $\log x$.

3. Demand and Supply Functions: **(25%)**

Use of derivative in finding stationary values (Maxima and Minima) of function of one variable only. Formulation, their properties, Total and marginal revenue, Total and marginal cost, market equilibrium.

4. Elasticity and Concept of Utility Function **(25%)**

Elasticity of demand and supply with respect to its properties, simple examples of elasticity of demand and supply. Theoretical concept of utility function.

Reference Books:

- (1) S. C. Gupta & V.K.kapoor : Fundamental of applied statistics Sultan Chand & Sons
New Delhi.
- (2) Sancheti & Kapoor: “Business Mathematics” Sultan chand & Sons, New Delhi.
- (3) Kapoor V. K. : “Business Mathematics” Sultan chand & Sons, New Delhi.
- (4) Parimal Mukhopadhyay: “Mathematical Statistics” Books & allied (p) Ltd.

To be effective from 2016-2017
REVISED SYLLABUS B.A. SEMESTER-3

STATISTICS ELECTIVE -- I 202 (PAPER 4)

MATHEMETICAL STATISTICS

1 Correlation : (25%)

Concept of linear correlation between two variables, Scatter diagram, Karl person's formula for correlation coefficient, spearman's rank correlation. Calculation of correlation coefficient from ungrouped data only. Simple examples.

2 Regression: (25%)

Concept of error in regression, principle of least squares, line of regression, Coefficient of determination and its interpretation. Uses of regression in forecasting.

3 Airthmetic and Geometric Progression: (25%)

Meaning of progression and series. The n^{th} term and sum of the first n terms of A.P. and G.P. (Without proof). Arithmetic and Geometric mean between two variables.

4. Interpolation and Extrapolation: (25%)

Meaning and assumptions, Idea of operator's Δ and E with examples. Newton's and Lagrange's interpolation formula (without proof) simple examples

Reference Books:

- (1) D. C. Sancheti & V.K.Kapoor: Statistics Theory, Methods & Application Sultan Chand & Sons.
- (2) S.C.Gupta & V. K. Kapoor : Fundamental of applied statistics Sultan chand & Sons New Delhi.
- (3) Sancheti & Kapoor : "Business Mathematics" Sultan chand & Sons,New delhi.
- (4) Kapoor V.K.: "Business Mathematics" Sultan chand & Sons,New delhi.
- (5) Parimal Mukhopadhyay: Mathematical Statistics" Books & allied (p) Ltd.