

M.A. 2nd Semester
Paper-203 (Compulsory)

Time : 3 Hrs.
Max. Marks : 100
External : 80
Internal : 20

QUANTITATIVE METHODS-II

- Note:** (i) Nine Questions will be set in all and students will be required to attempt 5 questions.
(ii) Question No. 1 will be compulsory and will consist of 8 short answer type questions of 2 marks spread over the entire syllabus (2*8=16 marks).
(iii) For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (16 marks each).

PREAMBLE

The main objective of this paper is to train the students to use the techniques of mathematical and statistical analysis, which are commonly applied to understand and analyze economic problems. The emphasis of this paper is on understanding economic concepts with the help of mathematical methods rather than learning mathematics itself. Hence in this paper a student will be initiated into various economic concepts, which are amenable to mathematical treatment. The paper also deals with simple tools and techniques, which will help a student in data collection, presentation, analysis and drawing inferences about various statistical hypotheses.

Unit - I

Index numbers: uses and types, tests for consistency, Base shifting, splicing and deflating of index numbers. Time series analysis: introduction and components, method of simple averages, moving averages and ratio to moving averages.

Unit - II

Basic concepts and definitions of probability; Laws of addition and multiplication; Conditional probability; Bayes theorem (statement); Binomial, Poisson and Normal distribution; Basic concepts of sampling- random and non-random sampling.

Unit - III

Types of data and statistical analysis procedures: Univariate, Bivariate and Multivariate (only overview); Hypothesis Testing procedures based on Z, t, χ^2 and F-test and one-way ANOVA.

Unit - IV

Correlation: Karl Pearson and Spearman's Rank, Meaning and assumptions of simple regression analysis; Single linear equation regression model (by OLS Method), Concept of an estimator and its desirable properties; Coefficient of determination. Estimation of simple and exponential growth rates.

Basic Reading List

- Vohra, N. D. Quantitative Techniques in Management, Tata McGraw Hill, New Delhi.
- Speigal, M. R. Theory and Problems of Statistics, McGraw Hill Book, London
- Croxton, F. E., D. Cowden and S. Klein, Applied General Statistics, Prentice Hall, New Delhi.
- Gupta S.C. and V.K. Kapoor, Fundamentals of Applied Statistics, S. Chand and Sons New Delhi.
- Yates, Frank, Sampling Methods for Census and Surveys, Charles, Griffin Co., London.
- Cochran, W. G., Sampling Techniques, John Willey, New York.
- Hansen, Hurst and Meadow, Sample Survey Methods and Theory, John Willey New York.
- Gupta S. C. Fundamentals of statistics, Himalaya Publishing house, New Delhi.
- Gupta S.P. and Gupta M. P. Business statistics, Sultan chand and sons, New Delhi.
- Kamanta J. Elements of Econometrics, Macmillan Publishing Co., Inc. New York.