B.A

DISCIPLINE SPECIFIC ELECTIVE (DSE) ECONOMICS

SEMESTER – VI

(BAB33601T) QUANTITATIVE METHODS

MAX. MARKS: 100

EXTERNAL: 70

INTERNAL: 30

PASS: 40%

CREDITS: 6

OBJECTIVE:

This course introduces the students with the applications of mathematical techniques to economic theory. It also tells about the statistical methods to analyse the data.

CO1	To understand and use the techniques of statistical analysis, which are commonly applied to understand and analyze economic problems
CO2	Understand the tabulated and graphic representation techniques for discrete and continuous data
CO3	Understand the fundaments of statistics to apply descriptive measures for data analysis
CO4	Understand the concept of Time series

INSTRUCTIONS FOR THE PAPER SETTER/EXAMINER:

1. The syllabus prescribed should be strictly adhered to.
2. The question paper will consist of three sections: A, B, and C. Sections A and B will have four questions each from the respective sections of the syllabus and will carry 10 marks each. The candidates will attempt two questions from each section.
3. Section C will have fifteen short answer questions covering the entire syllabus. Each question will carry 3 marks. Candidates will attempt any 10 questions from this section.
4. The examiner shall give a clear instruction to the candidates to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.
5. The duration of each paper will be three hours.

INSTRUCTIONS FOR THE CANDIDATES:

Candidates are required to attempt any two questions each from the sections A, and B of the question paper, and any ten short answer questions from Section C. They have to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.

Section - A

Unit 1: Differentiation of Functions: Simple and Partial Derivatives, Differentiation of Simple Functions – Polynomial (x) and Exponential Functions. Maxima and Minima of functions of one variable only. Their Applications of Micro and Macro Economics.

Unit 2: Matrices: Definition and Types, Operations (Sum, difference) Product and Transpose.

Unit 3: Adjoint and inverse of a matrix (up to 3x3) Solution of simultaneous equations (up to 3) by matrix methods and Crammer's Rule.

Unit 4: Data and Methods: Types of data; Method of Data Collection.

Section - B

Unit 5: Measures of Central Tendency: Mean, Median, Mode

Unit 6: Measures of Dispersion and Skewness

Unit 7: Correlation Analysis: Karl Pearson's (excluding grouped data) and Spearman's rank formula.

Unit 8: Regression Analysis: Meaning, properties, Line of Regression X on Y and Yon X.

Suggested Readings:

- K. Sydsaeter and P. Hammond (2002). Mathematics for Economic Analysis, Pearson Educational Asia: Delhi.
- Wainwright, Chiang, Fundamental Methods of Mathematical Economics, TataMcGrawHill, 2013.
- Archibald, C.C and Lipsey, R.G: An Introduction to a Mathematical Treatment of Economics, 1977, English Language Book Society.
- Sanchati, D.C. and Kapoor, V.K: Business Mathematics, New Delhi, Sultan Chand & Sons,1993.
- Gupta, S.C.: Fundamentals of Statistics, Bombay, Himalaya Publishing House.

