KHALSA COLLEGE AMRITSAR
(An Autonomous College)

B.A./B.Sc. (Semester System) (12+3 System of Education)

SEMESTER–I
ECONOMICS
Micro Economics

Time: 3 Hours **Max. Marks: 100**
Theory : 75
Internal Assessment : 25

Note: Instructions for the Paper–Setters/Examiners:

(i) First question consisting of 8 short answer questions (based upon the entire syllabus),
out of which 5 questions are to be attempted (each carrying 3 marks).
(ii) Students will attempt 1 out of 2 questions from each of four units (15 marks each).
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UNIT–I

Introductory: Definition of Economics, Adam Smith, Marshall and Robbins, Nature and Scope of Microeconomics. Basic Concepts: Human wants, Utility and Satisfaction, Basic Economic Problems.
Demand Function, Supply Function, Price Determination, Slope and Elasticity, Elasticity of Demand – Price, Income and Cross and their Measurement. Utility Analysis

UNIT–II

Indifference Curve Analysis
Theory of Production and Costs: Concept of Production Function. Laws of Returns to Scale
and Law of Variable Proportions .
Cost: Traditional and Modern Costs Theory, Concepts and Costs curves in the short run and long run. Revenue Curves and their relationship with elasticity of demand.

UNIT–III

Price determination under Various Market forms:
Perfect Competition- Features and Equilibrium of firm and Industry in Short run and Long run;
Monopoly- Features and Equilibrium under short run and Long run, Discriminating Monopoly. **Monopolistic Competition** – Features, equilibrium of firm and Group in Short run and Long run

UNIT–IV

Marginal Productivity Theory of Factor Pricing (with reference to labour) under Perfect Competition and Imperfect Competition, Modern Theory of Distribution.
Rent: Concept; Ricardian Theory and Modern Theory of Rent.
Interest: Concept of interest; classical theory, lonable funds theory.
Profit: Concept of profit; Risk theory and uncertainty theory.

Recommended Texts:

1. R.G. Lipsey: Introduction to positive economics, EL BS, London, 1969.
2. Stonier & Hague: A Text book of Economics Theory, 9th ed., ELBS, London, 1973.
3. Paul Samuelson : Economics, Mcgraw Hill, Kogakushad, Tokyo, 1973.
4. N.C. Ray : Microeconomic Theory, Macmillan, Delhi, 1975.
5. D. Salvatore : Microeconomics.
6. A. Koutsoyiannis: Modern microeconomics.

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SEMESTER–I

QUANTITATIVE TECHNIQUES

QUANTITATIVE TECHNIQUES–I

Time: 3 Hours **Max. Marks: 100**
Theory : 75
Internal Assessment : 25

Note: Instructions for the Paper–Setters/Examiners:

(i) First question consisting of 8 short answer questions (based upon the entire syllabus),
out of which 5 questions are to be attempted (each carrying 3 marks).
(ii) Students will attempt 1 out of 2 questions from each of four units (15 marks each).

UNIT–I

Solution of Linear Equations: Solution of Simultaneous Linear Equations(upto two variable case), Applications of Linear Equations in Economics; Solution of Quadratic Equations. Series: Arithmetic Progression Series, Geometric Progression Series and their applications in Economics.

UNIT–II

Elements of Analytical Geometry:
Straight line: Slope and Intercept of straight line, Equations of straight line- Intercept form and two-point form.
Circle: Standard form and General Equation of the Circle.
Set theory: Union, intersection, difference, symmetric difference, complementation.
UNIT–III

Difference between a constant and a variable, concept of functions, classifications of functions, Limits and continuity of a function (Excluding Trigonometric and Inverse functions): Concept of
differentiation (ab-intio principle).

UNIT–IV

Derivatives (Excluding Trigonometric and Inverse Functions): Rules of derivatives;
functions of functions rule; derivatives of implicit functions, parametric functions, exponential
functions, logarithmic functions; successive derivatives.
Books Recommended:

1. Monga, G.S.: Mathematics and Statistics for Economics.
2. Yamane, Taro: Mathematics for Economists.
3. Allen, R.G.D.: Mathematical Analysis for Economists.
4. Edward T Dowling: Introduction to Mathematical Economics.

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SEMESTER–II
ECONOMICS

INDIAN ECONOMY

Time: 3 Hours **Max. Marks: 100**
Theory : 75
Internal Assessment : 25

Note: Instructions for the Paper–Setters/Examiners:

(i) First question consisting of 8 short answer questions (based upon the entire syllabus),
out of which 5 questions are to be attempted (each carrying 3 marks).
(ii) Students will attempt 1 out of 2 questions from each of four units (15 marks each).

UNIT–I

Nature of Indian Economy. Agriculture in India: Nature and Importance of Agriculture, Causes of Decline in Productivity, Sustainable Agricultural Growth. Green Revolution and New Agricultural Strategy. Land Reforms: Need, Implementation and Critical Evaluation.

UNIT–II

Industry: Performance and Problems of Industrial Development in India, Public Sector and PrivateSector, Privatization of Public Sector Enterprises.Role of Small scale and Cottage Industries.
Latest Industrial Policy
.

UNIT–III

Foreign Trade: Direction and Composition of Exports and Imports Since 1991, Recent Foreign
Trade Policy, Balance of Payments Problem. Foreign Capital and Multinational Corporations in
India.

UNIT–IV

Features of Population Growth in India.Major Problems of the Economy - Unemployment, Poverty and Inequality, Indian Tax Structure, Centre-State Financial Relations and Inflation.
Planning- Objectives, Strategy, Evaluation of Planning in India. A Brief Idea of the Objectives,

Targets, Resources of the Latest Five Year Plan.

Recommended Texts:

1. Mishra and Puri: Inidian Economy, Himalaya Publication House, Mumbai, 2003.
2. Rudder Dutt and: Indian Economy (Latest), S. Sundharam Chand & Co. Ltd., New Delhi, 1998.
3. A.N. Aggarwal: Indian Economy, Vikas Publications, Delhi, 1975.
4. C.D. Wadhwa: Indian Economic Policy (1980), Tata McGraw Hill, Bombay,1973

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SEMESTER–II

QUANTITATIVE TECHNIQUES

QUANTITATIVE TECHNIQUES–II

Time: 3 Hours **Max. Marks: 100**
Theory : 75
Internal Assessment : 25

Note: Instructions for the Paper–Setters/Examiners:

(i) First question consisting of 8 short answer questions (based upon the entire syllabus),
out of which 5 questions are to be attempted (each carrying 3 marks).
(ii) Students will attempt 1 out of 2 questions from each of four units (15 marks each).

UNIT–I

Statistics: Definition, Scope in Economics, Significance, Limitations. Tabulation, Classification
and Graphical representation of data (Pie Chart, Bar Diagram, Histogram, Frequency Polygon,
Ogive Curve, etc.).

UNIT–II

Concepts and Measures of Central Tendency: Mean, Median and Mode; Concepts and Measures of Dispersion; Concepts and Measures of Skewness and Kurtosis.

UNIT–III

Correlation Analysis: Introduction, Importance, Karl-Pearson's Coefficient of Correlation, Spearman's Rank Correlation Coefficient, Simple Regression Analysis; Difference between Correlation and Regression, Lines of Regression, Inter-relationships between Correlation and Regression Coefficients.

UNIT–IV

Index Numbers: Concept of Index Number, Purpose Construction & Problems, Laspeyre, Paasche and Fisher's Formulae, Tests of Consistency, Concept of Consumer Price Index & Whole Sale Price Index.
Analysis of Time Series: Definition, Components of Time Series, Measurement of Trend by different methods

Books Recommended:

1. Gupta, S.P.: Statistical Methods (1981).
2. Croxton, Cowden & Klein: Applied General Statistics (1973).
3. Ya-lun-chou: Statistical Analysis (1975)
4. Kapur and Sexena: Mathematical Statistics (1970)
5. Murry, R. Speigal: Theory and Problems of Statistics (1972).

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SEMESTER–III
ECONOMICS

MACRO ECONOMICS

Time: 3 Hours **Max. Marks: 100**
Theory:80
Internal assessment:20

Instructions for the Paper Setters/Examiners:-
(i)First question consisting of 10 short answer type based upon the entire syllabus(Each Carrying 2 Marks) will be compulsory
(ii)Students will attempt 1 out of 2 questions from each of the four units (15 Marks Each).

UNIT–I

Distinction between Micro and Macro Economics; Determination of Income and Employment : Classical and Keynesian models; Say's Law of Market and aggregate demand and aggregate supply.
Consumption functions; average (short-run and long run) and marginal propensity to consume; Static and dynamic multipliers.

UNIT–II

Investment: Meaning, Demand schedules and factors affecting investment decision. Marginal Efficiency of Capital.Accelerator, multiplier-accelerator interaction.
Trade cycles-meaning, characteristics and phases.Samuelson and Hicks Models of trade cycles.

UNIT–III

Money: Its functions and role. Money and Capital Markets (Introductory). Quantity Theory of Money.Fisher's and Cambridge's equations.Liquidity preference theory.
Banking: Definitions of banks. Credit creation and credit control.

UNIT–IV
Inflation: Concept, Causes and cures. Inflation-unemployment Trade-off (only Phillips' contribution).

Macroeconomic Policies: Fiscal policy – meaning, objectives and instruments.
Monetary policy – meaning, objectives and instruments

Recommended Texts:

1. Shapiro, E. Macroeconomic Analysis, Harcourt, Brach and World, New York, 1978.
2. Dernaburg, T.F. and MC Dougall D.M., Macroeconomics : the Measurement, Analysis and Control of Aggregate Economic Activity, McGraw-Hill, Kogakusha, Tokyo, 1972.
3. Gupta, S.B. Monetary Economics : Institutions, Theory and Policy, S. Chand, New Delhi, 2000.

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SEMESTER–III

QUANTITATIVE TECHNIQUES

QUANTITATIVE TECHNIQUES–III

Time: 3 Hours **Max. Marks: 100**
Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:

(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
(ii) Students will attempt 1 out of 2 questions from each of the four units (20 marks each).

UNIT–I

Differentiation: Maxima and Minima of Functions, Partial derivatives, Higher order partial derivatives.

UNIT–II

Integration (Excluding Trigonometric and Inverse Functions): Indefinite Integrals; Integration by Partial Fractions; Integration by substitution; Integration by parts; Definite Integrals.
Application of Integration in Consumer Surplus and Producer Surplus.

UNIT–III

Matrices: Definition, Types, Addition, Subtraction and Multiplication of Matrices, Scalar Multiplication, Transpose of Matrix, Determinants and their Properties, Minors and Co-factors, Rank of a Matrix, Inverse of a Matrix, Crammer's Rule for the Solution of Simultaneous system of equations.
Applications of matrices in Economics.

UNIT–IV

Linear Programming: Formulation of problem, Assumptions, Graphical solution, Simplex method. Use of Artificial Variables, Dual Simplex method.

Input-Output Analysis: Basic concepts, Input-Output tables for closed and open economies, Leontief Basic Input-Output Model, Simple Applications of Input-Output Analysis.
Recommended Texts:

1. Yamane Taro: Mathematics for Economics, Prentice Hall of India, New Delhi, 1995.

2. Allen R.G.D.: Mathematical Analysis for Economists, ELBS and Macmillan Press, 1971.

3. Chaing, A.: Fundamental Methods of Mathematical Economics.

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SEMESTER–III
COMPUTER SCIENCE
Computer Oriented Numerical and Statistical Methods
(Theory)

Time: 3 Hours **Total Marks: 100**
4Hours/week **Theory Marks: 60**
Theory Internal Assessment M: 15
Practical Marks: 20
Practical Internal Assessment M: 05

Instructions for the Paper Setters:
(i) Eight questions are required to be set giving the equal weightage to all the units. The candidates will be required to attempt any five questions. All questions will carry equal marks.
(ii) Practical marks will include the appropriate weightage for proper maintenance of Lab record.
(iii) The students can use only Non Programmable & Non Storage Type Calculator.

UNIT-I

Introduction:
1 Numerical methods, Numerical methods versus numerical analysis, Errors and Measures of Errors.
2 Non-linear Equations, Iterative Solutions, Multiple roots and other difficulties, Interpolation methods, Methods of bisection, False position Method, Newton Raphson-method.
3 Simultaneous Solution of Equations, Gauss Elimination Method Gauss Jordan method. Gauss Siedel Method, Matrix Inversion Method.

UNIT II

4 Interpolation and Curve Fitting, Lagrangian Polynomials, Newton Methods : Forward Difference Method, Backward Difference Method Divided Difference Method.
5 Numerical Integration and Different Trapezoidal Rule, Simpson's 1/3 Rule Simpson's 3/8 Rule.
Numerical differentiation by Polynomial Fit Statistical Techniques
1 Measure of Central Tendency, Preparing frequency distribution table, Mean Arithmetic, Mean geometric, Mean harmonic, Mean median Mode.
2 Measure of dispersion, Skewness and Kurtosis Range, Mean deviation, Standard deviation, Co-efficient of variation, Moments Skewness Kurtosis.

UNIT III

1. Correlation Bivariate Distribution Multivariate distribution.
2. Regression B.C., Linear Regression, Multiple Regression .
3. Trend Analysis least square fit linear trend, Non-linear trend

$Y=ax^b$
$Y=ab^x$
$Y=ae^{bx}$
Polynomial fit: $Y=a+bx+cx^2$

Practical based on Computer Oriented Numerical and Statistical Methods.

Books Recommended:

1 B.S. Grewal: *Numerical Methods for Engineering,* Sultan Chand Publications.
2 V. Rajaraman: *Computer Oriented Numerical Methods*, Prentice Hall of India Private Ltd.

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SEMESTER–IV
ECONOMICS

INTERNATIONAL ECONOMICS AND PUBLIC FINANCE

Time: 3 Hours **Max. Marks: 100**

Theory:80
Internal assessment:20

Instructions for the Paper Setters/Examiners:-
(i)First question consisting of 10 short answer type based upon the entire syllabus(Each Carrying 2 Marks) will be compulsory
(ii)Students will attempt 1 out of 2 questions from each of the four units (15 Marks Each).

UNIT–I

International Trade: Internal and External Trade. Classical and Heckscher Ohlin Theories, Gains from Trade, Terms of Trade, (gross, net and income terms of trade). Trade and economic development.

Commercial Policy: Free trade vs. protection, rationale of a protectionist policy in less developed area. GATT & WTO (Introductory).

UNIT–II

Balance of Payments: Meaning and components of balance of payments, Methods for correcting adverse balance of payments, devaluation and direct control.

Rate of Exchange: Meaning and determination, Fixed and flexible exchange rates.

UNIT–III

Public Finance: Nature, scope importance.
Public Expenditure: Meaning, principles, importance, effect of public expenditure on production and distribution.

UNIT–IV

T**axes**: Meaning, classification, features of a good taxation system, canons of taxation, incidence and impact of taxation.

Public Debt: Meaning, objectives, importance, its burden.

Recommended Texts

1. Sodersten, B.O.: International Economics, Macmillan, London, 1980 .
2. Salvatore, B.: International Economics (1990), Macmillan Publishing Company, New York, 1975.
3. Maclean and: International Institutions in Trade Snowdown and Finance (1981).
4. Aggarwal, M.R.: International Institutions and Development in Developing Countries, Deep & Deep Publications, New Delhi, 2001.
5. Musgrave, R.A.: Theory of Public Finance.
6. Taylorm Philip: The Economics of Public Finance.
7. Buchanan, J.M.: The Public Finance.
8. Baltin, H.: Public Finance.
9. Herber, B.P.: Modern Public Finance.

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SEMESTER–IV
QUANTITATIVE TECHNIQUES–IV

Time: 3 Hours **Max. Marks: 100**

Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:

(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
(ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each)
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UNIT–I

Multiple Linear Regression: Concepts, Estimation and Applications (without derivations) of:
Partial and Multiple Correlation.
Non-Linear Regression: Quadratic and Exponential; Estimation of Fitting of Various Growth
Curves (Modified Exponential, Gempertz and Logistic).

UNIT–II

Probability: Definition, Additive & Multiplicative Laws and their Applications, Concept of Random Variable, Probability Mass Function & Density Function, Mathematical Expectation (meaning and properties), Moments, Moment Generating Function and Characteristic Function.

UNIT–III

Theoretical Probability Distributions: Derivations of the properties and numericals of Binomial, Poisson, Normal distributions.

UNIT–IV

Sampling: Various concepts – Population, Sampling Units, Complete Enumeration sample Surveys, Concept of an Estimator and The Standard Error, Standard Error of Estimates. Features of a Good Sample, Random and Subjective Sampling, Simple Random Sampling (with and without replacement), Stratified Random Sampling (applications only).

Books Recommended:

1. Mood Graybill and Boes: Introduction to the Theory of Statistics (1974)
2. Snedecor and Cochran: Statistical Methods.
3. Sukhatme and Sukhatme: Sampling Theory of Surveys with Applications (1970).
4. Croxton Cowden and Applied General Statistics (I 973).
5. Kapur and Gupta: Fundamentals of Mathematical Statistics.
6. Murray R. Spiegel: Theory and Problems Statistics (1972).

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SEMESTER–V
ECONOMICS

ECONOMICS OF DEVELOPMENT

Time: 3 Hours **Max. Marks: 100**
Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:
(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.
(ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each).

UNIT–I

Economic Development: Meaning and Measurement, Economic and Non-Economic Factors, Nature of Underdevelopment, Characteristics of Undeveloped Countries. Human Development Index.
Dualism: Social and Technological Dualism, Lewis Model of Unlimited Supply of Labour, Problems of Unemployment and Disguised Unemployment.

UNIT–II

Models of Growth: Classical, Marxian, Schumpeter's, Harrod-Domar and Solow's Growth Models.

Unit-III

Rostow's Stage Theory, Strategies of Economic Development-Balanced vs. Unbalanced Growth; Theory of Big Push; Liebenstein's Critical Minimum Efforts Thesis, Export Promotion and Import Substitution.

UNIT–IV

Capital Formation – Meaning and Sources. Choice of Technique, Role of Planning in Under Developed Countries, Need, Objective, Strategy, Types and Problems of Planning.

Suggested Readings:

1. Rostow W.W.: Stages of Growth
2. G.M. Meier: Leading Issues in Economic Development.
3. MichealTodaro: Economic Development in the Third World.
4. Higgins: Economic Development: Theory and Politics
5. Meier, G.M.: Leading Issues in Economic Development, Oxford University Press, New Delhi, 1995.
6. Thirlwall, A.P.: Growth and Development, Macmillan, London, 1999.
7. Todaro, M.P.: Economic Development in Third World, Oxford University, London.
8. Yotopoulous, P.A. and Nugent, J.: Economics of Development, Harper and Row, New York.

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SEMESTER–V
QUANTITATIVE TECHNIQUES

QUANTITATIVE TECHNIQUES–V

Time: 3 Hours **Max. Marks: 100**

Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:

(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks) will be compulsory.

(ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each).

UNIT–I

Sampling Distributions: Derivation of properties of Z, T, Chi Square and F distributions.

UNIT–II

Statistical Inference: Point & Interval Estimation; Properties of a Good Estimator, Maximum Likelihood Method of Estimation, its applications for Binomial, Poisson and Normal distributions. Basic Concepts of Null and Alternative Hypotheses, Types of Errors; One Tailed and Two Tailed Tests, Power of Test, Critical Region.

UNIT–III

Tests of significance based on normal deviate (Z), T, Chi square and F statistics.

UNIT–IV

Analysis of Variance: Introduction, Assumptions, Techniques of Analyzing Variance, Analysis of Variance of one-way and two-way classified data.

Books Recommended:

1. Sukhatne and Sampling Theory of Surveys with Sukhatme Applications (1970).
2. Goon, Gupta and An Outlines of Statistical Theory, Dass Gupta Vol. 1(1977).
3. Kapur and Gupta Fundamentals of Mathematical Statistics, Sultan Chand, New Delhi.
4. Murry, R. Spiegal Statistics: Theory & Practical (1972), McGraw Hill, New York.

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SEMESTER–VI
ECONOMICS

QUANTITATIVE METHODS FOR ECONOMISTS

Time: 3 Hours **Max. Marks: 100**

Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:

(i) First question consisting of 10 short answer type based upon the entire syllabus. (each carrying 2 marks) will be compulsory.

(ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each).

UNIT–I

Sets, Relations and functions and continuity, Derivative of simple functions only (excluding log & exponential functions).Maxima/Minima for single variable functions. Introduction to matrices - definition, properties & inverse.

UNIT–II

Measures of central tendency — Mean, Mode, Median and Geometric Mean; Measures of dispersion.

UNIT–III

Concepts and Measure of skewness and kurtosis: Boyle's & Karl Pearson's measures. Simple correlation& regression (ungrouped & grouped data).

UNIT–IV

Interpolation: Concepts and Methods — Binomial expansion, Newton and Lagrange's Method
(with emphasis on missing values only). Price Index Numbers–Weighted and Unweighted Index
Numbers, various formulae and consistency tests.

Suggested Readings:

1. Archibald, G. & R.G. Lipsey (1973); Introduction to a Mathematical Treatment of Economics, 2nd Ed. Weisdenfeld and Nicholson, London.
2. Yamane, Taro (1968); Mathematics for Economists, 2nd ed. Prentice Hall, Englewood Cliffs, New Jersey.
3. Croxton, F.E. Cowden D.J. and Klein, S. (1973); Applied General Statistics, 3rd. Ed., Prentice Hall of India, New Delhi.
4. Fox, I.A. (1972); Intermediate Economic Statistics, Wiley Eastern Pvt. Ltd., New Delhi.
5. Nagar, A.L. and Das, R.K. (1976); Basic Statistics, Oxford University Press, Bombay.
6. Baumol (1973); Economic Theory and Operations Analysis, Prentice Hall of India, Private Ltd., New Delhi.

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SEMESTER–VI
QUANTITATIVE TECHNIQUES–VI

Time: 3 Hours **Max. Marks: 100**
Theory:80
Internal assessment:20

Instructions for the Paper-Setters/Examiners:
(i) First question consisting of 10 short answer type based upon the entire syllabus, (Each Carrying 2 Marks)) will be compulsory.
(ii) Students will attempt 1 out of 2 questions from each of the four units (15 marks each).

UNIT–I

Definition, Nature and scope of Econometrics. Simple Linear Regression Model (OLS method) with applications.

UNIT–II

General Linear Regression Model, assumptions, properties (BLUE).
Gauss-Markov Theorem, Concepts of R2 and□R2, Test of Significance (Stress on Numericals).

UNIT–III

Econometric Problems of Heteroscedasticity and Multicollineraity in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures.Specification Bias.

UNIT–IV

Problems of Auto-Correlation in the Regression Analysis: Sources, Consequences, Tests and Remedial Measures. Distributed Lag Models and Auto-Regressive Models. Dummy Variable Technique and its Uses.

Books Recommended:

1. Koutoyannis, A.: Theory of Econometrics.
2. Gujarati: Basic Economics (2003).
3. Mehta and Madnani: Basic Economics.
4. Stock and Watson: Introduction to Econometrics (2004).
5. Dougherty C.: Introduction to Econometrics (2007).