

University of Mumbai



No. AAMS(UG)/ 44 of 2020-21

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges and Directors of the Recognized Institutions in Faculty of Humanities is invited to the syllabus uploaded Academic Authority Unit which was accepted by the Academic Council at its meeting held on June, 2016 vide item No.4.4 relating to the revised syllabus as per the (CBCS) for the S.Y.B.A Economics (Sem. III & IV) Applied Component.

They are hereby informed that the recommendations made by the Board of Studies in **Economics** at its online meeting held on 9th May, 2020 vide Item No.1 and subsequently made by the Board of Deans at its meeting held on 28th September, 2020 vide item No. 2 & 3 have been accepted by the Academic Council at its meeting held on 23rd February, 2021 vide item No. 5.47 (R) & 5.48 (R) and that in accordance therewith, the revised syllabus as per the (CBCS) of S.Y.B.A. Sem. III & IV Applied Component has been brought into force with effect from the academic year 2020 -21 accordingly. (The same is available on the University's website www.mu.ac.in).

MUMBAI - 400 032
September, 2021


(Dr. B.N. Gaikwad)
I/c REGISTRAR

To

The Principals of the Affiliated Colleges and Directors of the recognized Institutions in Faculty of Humanities. (Circular No. UG/334 of 2017-18 dated 9th January, 2018.)

A.C/5.47 & 5.48 / 23/02/2021

No. AAMS(UG)/44 -A of 2020-21 MUMBAI-400 032
Copy forwarded with Compliments for information to:-

15th September, 2021

- 1) The Dean, Faculty of Humanities,
- 2) The Chairman, Board of Studies in Economics,
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Director, Board of Students Development,
- 5) The Co-ordinator, University Computerization Centre,


(Dr. B.N. Gaikwad)
I/c REGISTRAR

Copy to :-

- 1. The Deputy Registrar, Academic Authorities Meetings and Services (AAMS),**
- 2. The Deputy Registrar, College Affiliations & Development Department (CAD),**
- 3. The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),**
- 4. The Deputy Registrar, Research Administration & Promotion Cell (RAPC),**
- 5. The Deputy Registrar, Executive Authorities Section (EA),**
- 6. The Deputy Registrar, PRO, Fort, (Publication Section),**
- 7. The Deputy Registrar, (Special Cell),**
- 8. The Deputy Registrar, Fort/ Vidyanagari Administration Department (FAD) (VAD), Record Section,**
- 9. The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,**

They are requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to in the above circular and that on separate Action Taken Report will be sent in this connection.

- 1. P.A to Hon'ble Vice-Chancellor,**
- 2. P.A Pro-Vice-Chancellor,**
- 3. P.A to Registrar,**
- 4. All Deans of all Faculties,**
- 5. P.A to Finance & Account Officers, (F.& A.O),**
- 6. P.A to Director, Board of Examinations and Evaluation,**
- 7. P.A to Director, Innovation, Incubation and Linkages,**
- 8. P.A to Director, Board of Lifelong Learning and Extension (BLLE),**
- 9. The Director, Dept. of Information and Communication Technology (DICT) (CCF & UCC), Vidyanagari,**
- 10. The Director of Board of Student Development,**
- 11. The Director, Department of Students Welfare (DSD),**
- 12. All Deputy Registrar, Examination House,**
- 13. The Deputy Registrars, Finance & Accounts Section,**
- 14. The Assistant Registrar, Administrative sub-Campus Thane,**
- 15. The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,**
- 16. The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,**
- 17. The Assistant Registrar, Constituent Colleges Unit,**
- 18. BUCTU,**
- 19. The Receptionist,**
- 20. The Telephone Operator,**
- 21. The Secretary MUASA**

for information.

UNIVERSITY OF MUMBAI

S.Y.B.A

ECONOMICS- SEMESTER – III

APPLIED COMPONENT (Revised Syllabus)

(To be implemented with effect from the academic year 2020–2021)

A) DEMOGRAPHY- I

OR

B) ENTREPRENEURIAL DEVELOPMENT-I

OR

C) INVESTMENT ANALYSIS-I

OR

D) INDUSTRIAL RELATIONS AND TRADE UNIONISM –I

OR

E) ELEMENTARY QUANTITATIVE TECHNIQUES-I

OR

F) AGRICULTURAL AND RURAL DEVELOPMENT-I

(A) DEMOGRAPHY- I

Preamble:

This paper aims to educate the students about the unique position of demography among various branches of population science and its specific significance to students of Economics. It also throws light on various population theories, concepts, measures and the trends in growth of population as well as the sources of demographic data.

Unit: I Introduction (15 lectures)

How demography is different from population science- Applications in other disciplines- Nature, scope and importance of demography- Population theories: Malthus, Optimum theory of population, Demographic transition theory-Trends in population growth: Developed Vs. Developing Countries

Unit: II Sources of demographic data (15 lectures)

Sources of demographic data in developed and developing countries- Features of Indian census (2011 census)-National Sample Survey-Civil registration system- Relative merits and demerits

Unit: III Basic concepts and measures (15 lectures)

Concept related to fertility and mortality – Crude Birth Rate (CBR), Crude Death Rate (CDR), Standardized birth rates (SBR), Standardized Death Rate (SDR)-Methods to rectify the errors in Age Data - Whipples Index, Myers Index, UN's Method-Relative merits and demerits.

REFERENCES:

- 1) A.K. P.C. Swain (2008) – ‘Population Studies’ – Kalyani Publications, Ludhiana.
- 2) Bhende A.A. & Tara Kanitkar (1982) – ‘Principles of Population Studies’– Himalaya Publishing House, Bombay.
- 3) Hans Raj (1984) – ‘Fundamentals of Demography – Surjeet Publication, Delhi.
- 4) Jhingan, Bhat & Desai – ‘Demography’ –
- 5) Dr.D.D.Kachole (2001) – ‘Demography’ – Kailasha Publication, Aurangabad.

(B) ENTREPRENEURIAL DEVELOPMENT-I

Preamble:

The paper is designed with the twin goals of making the students aware of the duties of an entrepreneur and his unique role in economic development. This paper also deals with different theories of entrepreneurship and concludes it by emphatically ascertaining the disposition of entrepreneur admits varying social responsibilities.

Unit: I Introduction (15 lectures)

Concept of an entrepreneur and entrepreneurship-Role of entrepreneurs in economic development-Qualities of an entrepreneur-Functions of entrepreneurs-Factors influencing entrepreneurship-Growth of entrepreneurship in India. (Selected Case studies)

Unit: II Theories of entrepreneurship (15 lectures)

The Innovation Theory of J.A. Schumpeter-Need for Achievement Theory by David McClelland-Peter Drucker's Theory of Opportunity-Max Weber's theory of social change-Kunkel's theory of social behavior

Unit: III Entrepreneur and social responsibility (15 lectures)

Responsibility for Consumers-Responsibility for Employees-Responsibility for Investors-Responsibility for Local Public-Responsibility at the National and International levels-Development of Entrepreneurs in the recent past.

REFERENCES:

- 1) Desai Vasant, (2001), 'Dynamics of Entrepreneurial Development and Management', Himalaya Publications, Mumbai
- 2) Drucker, PF (1985). 'Innovation and Entrepreneurship'. New York: Harper & Row Publishers
- 3) Gupta C.B.(2013) , 'Entrepreneurial Development', S. Chand and Company ,New Delhi
- 4) Mark Casson (1982), 'The Entrepreneur an Economic Theory', Edward Elgar Publishing Limited.
- 5) Vasant Desai (2009), 'Fundamentals of Entrepreneurship and Small Business Management', Himalaya Publishing House, Mumbai.

(C) INVESTMENT ANALYSIS: I

PREAMBLE:

The paper deals with the institutions associated with and the instruments of investments. Apart from the study of investment theories, students are expected to understand various investment avenues. The subtopics on securities markets such as primary and secondary markets, SEBI and Depositories have been incorporated to help students understand the basics of investment horizon. Elementary mathematical and statistical techniques are expected to be used in the teaching of the tools of investment analysis such as the present value, discounted cash flows, etc.

Unit-I Introduction:

[15 lectures]

Investment: Meaning and scope - Investment V/s Speculation, Investment V/s Gambling - Types of Investors. Objectives of Investor - Characteristics of Investment: risk, return, safety. liquidity. Tax shelter, etc. - Non-marketable financial assets: Deposit with Banks, Instruments of Post offices, public provident fund, National saving certificate, preference shares, LIC, Real Assets etc. - Marketable financial assets: Money Market Instruments - Bonds or Fixed Income Securities - Debentures- Equity Shares - Mutual Fund Schemes - Financial Derivatives.

Unit-II Securities Market:

[15 lectures]

Participants in the Securities Market- Primary Market, Role of Primary Market- Secondary Market: its functions and Operations, Stock Markets in India, Over the Counter Exchange of India (OTCEI) -

Securities and Exchange Board of India: Objectives, Powers and Functions. Depositories - CDSL, NSDL- Role of depositories

Unit-III Securities Market Analysis:

[15 lectures]

Analysis of securities Sources and Types of Information Needed for Security Analysis - analysis of market - Financial Market data - Benefits and limitation of market data Valuation - Theoretical Framework - Schematic Presentation of Theory - investment and time value of money -Discounted Cash Flows Net present value method. Moving Averages - Advantages of Moving Averages.

REFERENCES:

1. Hirschey, M. (2001), Investment Theory and Applications, Harcourt College,Publisher, USA
2. Shalla V. K. (1983), Investment Management, Security Analysis and Portfolio Management, S. Chand, New Delhi.
3. Chandra, Prasanna (2000) Investment Analysis and Portfolio, Management, Tata, McGraw-Hill Publishing Company Ltd, New Delhi.
4. Chandra, Prasanna (1993) Finance Sense, Tata McGraw-Hill Publishing Company, Ltd, New Delhi.

5. Hirschey, M. (2001), Investment Theory and Applications, Harcourt College, Publisher, USA

(D) INDUSTRIAL RELATIONS AND TRADE UNIONISM -I

PREAMBLE:

This course attempts to provide a basic conceptual understanding of the economics of industrial relations in India. The syllabus also includes the empirical relevance of theories with suitable examples from a practical industrial relations viewpoint. Such an attempt will be strengthened to enable familiarity with relevant data along with their limitations.

Unit: I Introduction (15 Lectures)

Industrial relations: Meaning and scope - Employer - employee relationship - Industrial relations policy in India - National commission on labour 2002 - Industrial relations in multinational corporations - Industrial relations in public sector.

Unit: II Industrial conflicts (15 Lectures)

Industrial conflicts: Definition, structure and classification - Causes of industrial conflicts in India - Labour unrest - Strikes and lockouts.

Unit: III Measures of industrial disputes (15 Lectures)

Measures to resolve industrial disputes - Labour welfare officer: work and role - standing orders - Grievances procedures - Collective bargaining - Workers participation in management.

REFERENCE:

- 1) Joshi C.K.(1967), Unionism in Developing Economy, Asia publication House,Bombay.
- 2) Madhavi Mitra and Nana Shahane(2003),Manushyabal VyavasthapanV Aydyogik Sambandh (Marathi), Rajhans Prakashan, Pune.
- 3) Myers C.A. & Kannappan S.(1970), Industrial Relations in India, Asia Publishing House, India.
- 4) Punekar Devdhar and Sankaran, Labour Welfare, Trade Unionism and Industrial Relations.
- 5) Singh J.K.(1998),Labour Economics Principles, Problems and Practices, Deep and Deep publications Pvt.Ltd New Delhi.

(E) ELEMENTARY QUANTITATIVE TECHNIQUES-I

Preamble:

The central focus of the paper is to introduce students to the fundamentals of statistical reasoning and statistical methods in research. The course introduces the notions of the basic statistical tools, how to calculate the basics of statistics and how to evaluate them. The paper on Elementary Quantitative Techniques is based on statistical techniques, basic probability and arithmetic techniques (financial applications)

Unit: I Introduction to Statistics, Collection, Classification, and Presentation of Data, Measures of Central Tendency (15 Lectures)

Statistics: Characteristics of Statistics as Data, Functions, Limitations and Uses of Statistics- Data sources: Primary and Secondary sources—Methods of Sampling-Classifications and Tabulation Frequency distribution (Univariate data): Discrete, Continuous, and Cumulative- Graphical representation: Bar diagram, Histogram, Pie chart, Frequency Polygon Frequency Curve- Measures of Central Tendency- Arithmetic Mean Median and Mode.

Unit: II Measures of Dispersion (15 Lectures)

Introduction: Objectives of measuring dispersion, Qualities of a good measure of Dispersion- Measure of Dispersion: Algebraic (Absolute and Relative) and Graphic (Lorenz Curve)- Bivariate Frequency Distribution-Correlation Analysis: meaning, Correlation and Causation, Types of Correlation.

Unit: III Probability, Financial Statistics (15 Lectures)

Probability: concepts- sample space, independent and dependent events-Calculation of probability using permutation and combination-Financial Statistics: Profit, Loss and Discount- Simple and Compound interest, Growth and Depreciation.

REFERENCES

- 1) Dowling E. D, Introduction to mathematical Economics, Schaum's Outline Series, McGraw-Hill, 2001.
- 2) Guha A.: Quantitative Aptitude, Tata McGraw-Hill, New Delhi, 2005
- 3) Gupta S.P.: Statistical Methods, S. Chand, New Delhi, 2008.
- 4) Kothari C.R: Research Methodology, New Age International publishers, 2004
- 5) Sancheti, D. C and V.K. Kapoor: Statistics: Theory, Methods and Applications, Sultan Chand & Sons, New Delhi, 2007.

F) AGRICULTURAL AND RURAL DEVELOPMENT-I

Preamble:

This paper will provide a strong overview about the Indian economy by going through various topics of agriculture and rural development. The learners also will be able to understand the role of agriculture in development. Credit is bloodline to the agricultural sector, the students will go through the institutional and non institutional sources of credit to the agriculture. The learners will be also studying the agricultural marketing in the last unit of the syllabus.

Unit: I Introduction (15 lectures)

Characteristics and composition of rural economy- Indicators of rural development- Diversification of rural economy-Role and importance of agriculture in rural economy- Relationship between farm and non -farm sectors.

Unit: II Agricultural Credit (15 lectures)

Need of agricultural credit- Sources of institutional and non- institutional credit- Structure of agricultural finance-Regional Rural Banks (RRB), NABARD- Rural Indebtedness- Farmers Suicides

Unit: III Agricultural Marketing (15 lectures)

Concept, nature and types of agricultural marketing-Factors of agricultural market-Role and importance of agricultural marketing-Problems and measures of agricultural marketing-NAFED, Commission on Agricultural Cost and Price (CACP)

REFERENCES:

- 1) Mishra and Puri (2012), 'Indian economy', Himalaya Publishing House New Delhi.
- 2) Desai.S.S.M (1986) 'Fundamental of rural economics', Himalaya publishing House, Mumbai.
- 3) Dr. K. Venkata Reddy (1999) 'Agriculture and Rural Development (A Gandhian Perspectives)' Himalaya Publishing House, Mumbai
- 4) Ramesh singh (2019), 'Indian Economy', Mc Graw Hill Education, New Delhi
- 5) Bhalla, G.S. (2004) 'State of the Indian Farmer' Volume- 19: Globalization and Indian Agriculture, Academic Foundation, New Delhi.

UNIVERSITY OF MUMBAI

S.Y.B.A

ECONOMICS- SEMESTER – IV

APPLIED COMPONENT (Revised Syllabus)

(To be implemented with effect from the academic year 2020–2021)

A) DEMOGRAPHY- II

OR

B) ENTREPRENEURIAL DEVELOPMENT-II

OR

C) INVESTMENT ANALYSIS-II

OR

D) INDUSTRIAL RELATIONS AND TRADE UNIONISM –II

OR

E) ELEMENTARY QUANTITATIVE TECHNIQUES-II

OR

F) AGRICULTURAL AND RURAL DEVELOPMENT-II

(A) DEMOGRAPHY- II

Preamble:

The pertinent aim of this paper is to generate awareness or the inter-relationship between economic development and population with the help of demographic theories. It also highlights demographic techniques and basic sources of demographic data in the Indian economy. Several aspects of the population policy and the study of its social characteristics are other important components of this paper.

Unit: I Basic Concepts (15 lectures)

Fertility – Delimitation and factors affecting fertility; Nuptiality –Definition, age at marriage and factors affecting nuptiality; Mortality - Definition and factors affecting mortality; Life Table – Definition and types.

Unit: II Migration and Urbanization (15 lectures)

Migration – Definition and types, factors affecting migration, Theory of Migration (Harris - Todaro model), issues related to migration; Urbanisation - Definition, trends and patterns of urbanization in India, problems of urbanization in India (poverty, food supply, water, sanitation, housing, slum areas, employment, health, education, transport, environment)

Unit: III Population Policy in India (15 lectures)

Evolution of India's population policy; Shift in policy focus from population control to family welfare to women empowerment; Family Planning & Family Welfare Programmes : Importance and methods; Population Projection in India.

REFERENCES:

- 1) A.K. P.C. Swain (2008) - 'Population Studies' - Kalyani Publications, Ludhiana.
- 2) Agarwal S.S. (1985) - 'India's Population Problem' - Tata McGraw Hill Publication, Bombay.
- 3) Bhende A.A. & Tara Kanitkar (1982) - 'Principles of Population Studies' - Himalaya Publishing House, Bombay.
- 4) Dr. D.D.Kachole (2001) - 'Demography' - Kailasha Publication, Aurangabad.

- 5) Hans Raj (1984) - 'Fundamentals of Demography - Surjeet Publication, Delhi.

(B) ENTREPRENEURIAL DEVELOPMENT-II

Preamble:

An economic development of any particular nation is depending upon the spirit of entrepreneurship at certain extent. This paper is revised keeping in view significance of entrepreneurship in the globalised world. The learners should feel motivated to enhance their knowledge, develop skills and desirable attitude towards self-employment. The paper should be taught using innovative, participatory style of learning based on practical knowledge derived from industrial and institutional visits.

Unit: I Project Management (15 lectures)

Project identification-Sources of Finance for the Project-Project selection- Formulation of Project Report (Specimen)-Project appraisal-Problems in selecting a project

Unit: II Entrepreneurial Development (15 lectures)

Location of an Enterprise-Registration of an enterprise-Need for training-Types of training- Entrepreneurial Development programmes- Institutional support to entrepreneurs (NSIC, SIDO, SIDBI, SSIDC, DIC, KVIC etc.)

Unit: III Challenges of Entrepreneurship (15 lectures)

Internal and external problems faced by entrepreneurs- Role of rural entrepreneurs- Special challenges of rural entrepreneurs- Women entrepreneurs: Problems and solutions- Globalization and entrepreneurship-Case studies of successful and sick enterprises.

REFERENCES:

- 1) Desai Vasant, (2001), 'Dynamics of Entrepreneurial Development and Management', Himalaya Publications, Mumbai
- 2) Drucker, PF (1985). 'Innovation and Entrepreneurship'. New York: Harper & Row Publishers
- 3) Gupta C.B.(2013) , 'Entrepreneurial Development', S. Chand and Company ,New Delhi
- 4) Singh P.N. and Saboo J.C. (2003), ' Entrepreneurship Management', P.N.Singh Centre, Mumbai
- 5) Vasant Desai (2009), 'Fundamentals of Entrepreneurship and Small Business Management', Himalaya Publishing House, Mumbai

(C) INVESTMENT ANALYSIS: II

Preamble:

The paper deals with various investment theories in the beginning. Apart from the study of investment theories, techniques of fundamental and technical analysis have been incorporated to help students understand the basics of investment selection. Elementary mathematical and statistical techniques are expected to be used in the teaching of these tools of investment analysis.

Unit-I Theories of Investment Analysis:

[15 lectures]

Efficient Market Concept - Efficient Market Hypothesis - Random Walk Theory - Portfolio Management – Meaning, Evolution, objectives, phases - Role of Portfolio Managers, Advantages of Portfolio Management. Portfolio Theory: Portfolio return, risk, diversification and optimal portfolio - the Single Index Model - Capital Asset Pricing Theory.

Unit-II Fundamental Analysis:

[15 lectures]

Fundamental Analysis V/s Technical Analysis- Economy Analysis – Meaning, Framework, Industry Analysis – Concept of Analysis, Industry Life Cycle, Industry Characteristics - Company Analysis- Sources of information for company analysis (Internal, External)

Unit-III Technical Analysis of the Market:

[15 lectures]

What is technical analysis? - Tools of technical analysis -Principles of Technical analysis - Dow Theory - Price Chart, Line Chart, Bar Chart, Japanese Candlestick Chart, Trends and Trend Reversals, Chart Patterns, Support and Resistance, Reversal Patterns, Continuation Patterns and Elliot Wave Theory -

REFERENCES:

1. Hirschey, M. (2001), Investment Theory and Applications, Harcourt College Publisher, USA
2. Shalla V. K. (1983), Investment Management, Security Analysis and Portfolio Management, S. Chand, New Delhi.
3. Chandra, Prasanna (2000) Investment Analysis and Portfolio, Management, Tata McGraw-Hill Publishing Company Ltd, New Delhi.
4. Chandra, Prasanna (1993) Finance Sense, Tata McGraw-Hill Publishing Company Ltd, New Delhi.
5. Hirschey, M. (2001), Investment Theory and Applications, Hircourt College Publisher, USA
6. V. A. Avadhani, Investment and Securities Market in India, Himalaya Publishing House.

7. V. K. Bhalla, Portfolio Analysis and Management, Sultan Chand & Sons
8. Mishra Rajiv and Jha Nishikant : Investment Analysis and Portfolio Management, 1st edition, 2016, Himalaya Publishing House. Mumbai.

(D) INDUSTRIAL RELATIONS AND TRADE UNIONISM -II

Preamble:

Just as capitalists have a role to play in balancing the process and function of capitalism, so too do the workers. From that point of view, the two sections of trade unionism and industrial relations are designed in the syllabus so that the students can understand the concept of trade unions and relationship in industrial sector.

Unit: I Introduction (15 Lectures)

Trade unionism: Meaning, scope, objectives and importance - History of trade union movement in India - Structure of trade unions in India - International labour organization and Indian Trade union movement.

Unit: II Role of Trade Union (15 Lectures)

Functions of trade unions - Trade unions and environment conservation - Impact of globalization on trade unions in India - Problems of trade unions - White collar unionism

Unit: III Administration of Trade Union (15 Lectures)

Trade unions: Registration - Administration - Finances - Leadership ideology - Trade union act 1926 - Workers compensation act

REFERENCE:

- 1) Amin, Ash (Ed.), Post-Fordism-A Reader, Blackwell, Oxford, 1994 (Module 2)
- 2) Government of India, Ministry of Human Resource Development, Report of Second National Commission on Labour, 2002 (Module 3, 4)
- 3) Hicks J.R., The Theory of Wages, Clarendon Press, Oxford, 1932 (Module1)
- 4) Pencavel, John, Labour Markets under Trade Unionism: Employment, Wages and Hours, Basil Blackwell, Cambridge, Massachusetts, 1991 (Module 1)
- 5) Rees, Albert, The Economics of Trade Unions, University of Chicago Press, Chicago, 1973 (3rd Edition) (Module 1)

(E) ELEMENTARY QUANTITATIVE TECHNIQUES-II

Preamble:

The central focus of the paper is to introduce students to the Fundamentals of Mathematics and its Applications in Economics along with the basics of Algebra.

Unit: I Equations, Graphs, Functions, Economic Applications (15 Lectures)

A: Equations and Graphs—Cartesian Coordinate System, Linear equations and Graphs, Slopes, Intercept, Equation of a Straight-Line- Applications of Linear Equations in Economics.

B. Function— Concepts, Graphing Functions (Linear and Quadratic) Equations, Solving Quadratic Equations.

C. Systems of Equation—Graphical Solutions-Demand and Supply Analysis, Break-Even Analysis, Income Determination Models.

Unit: II Limits, Differentiation, Economic Applications (15 Lectures)

A: Limits —Continuity, Differentiability and Continuity, Rules of Differentiation (Constant, Linear and Power Functions, Sums and Differences, Product, Quotient).

B. Higher Order Derivatives — Increasing and Decreasing Functions, Concavity and Convexity, Inflection Points.

C. Optimising Economic Functions for Business — Maximising profits, and Minimising Costs, Relationships among Total, Marginal and Average Functions.

Unit: III Matrix Algebra, Linear Programming (Economic Applications), Algebra. (15 Lectures)

A: Matrix Algebra—Definition and types of Matrices, Algebraic Operations of Addition, Subtraction, Scalar and Vector Multiplication, and Multiplication of Matrices {2x2 only}.

B: Linear Programming— Formulation of the Objective Function and the Constraints, Graphical Solution.

C. Algebra—Sequences and Series, Arithmetic and Geometrical Progression, Sum of nth terms, series.

REFERENCES

- 1) Anthony M. and Norman Briggs, Mathematics for Economics and Finance, Cambridge University Press, Replika Press Pvt. Ltd., Delhi, 2002.
- 2) Bose D., An Introduction to Mathematical Economics, Himalaya Publishing House, New Delhi, 2007.
- 3) Chiang A. C., Fundamental method of Mathematical Economics, Mc-Graw Hill, New York, 1986.

- 4) Dowling E. T., Mathematical Methods for Business and Economics, Schaum's Outline Series, McGraw -Hill, 1993.
- 5) Guha A.: Quantitative Aptitude, Tata McGraw-Hill, New Delhi, 2005

F) AGRICULTURAL AND RURAL DEVELOPMENT-II

Preamble:

Through this paper on agricultural and rural development the learners will be able to understand about the rural infrastructure. Especially how there are various lacking in the infrastructure. The learners will also able to get acquainted with the rural industries, its role and problems. There is also rural poverty persist in the country, which will be properly understood by the learners and also how there will be proper implementations of poverty alleviation programs and the role of SHG's is there for tackling poverty and inequality.

Unit: I Rural Infrastructure (15 lectures)

Role and significance of rural infrastructure in development-Rural energy- Role of transport, Communication, irrigation, Health and education in rural development

Unit: II Rural Industries (15 lectures)

Meaning, types, role, problems and measures of agro based industries- Role and problems of sugar factory-Food and fruits processing industry-Role of District Industry Centre (DIC)- Role and problems of small scale industries.

Unit: III Rural Poverty and Unemployment (15 lectures)

Poverty- Meaning, nature, causes and extent- Various rural development programmes for reducing poverty- Unemployment: Meaning, causes, types and measures- Poverty alleviation through Self help groups (SHG's).

REFERENCES:

- 1) Bhalla, G.S. (2004) 'State of the Indian Farmer' Volume- 19: Globalization and Indian Agriculture, Academic Foundation, New Delhi.
- 2) Department of Agriculture, 'Cooperation & Farmers Welfare', Ministry of Agriculture & Farmers Welfare Government of India, Krishi Bhawan, New Delhi-www.agricoop.nic.in
- 3) Desai.S.S.M (1986) 'Fundamental of rural economics' Himalaya publishing House, Mumbai.
- 4) Dutta and Sundaram (2012) : 'Indian economy', S. Chand and Company New Delhi.
- 5) Ramesh singh (2019), 'Indian Economy', Mc Graw Hill Education, New Delhi