

## **Courses for ARS/NET Examination**

### **Agricultural Economics (Code 47)**

#### **Unit 1: Economic Theory**

Nature and tools of economic analysis; theory of consumer behavior; production theory; costs theory; theory of firm; price determination under different markets, price discrimination, effect of taxation under different market conditions; welfare economics; market failures; nature of macroeconomic analysis; national income; consumption; saving and investment; theory of business cycle; functions and demand for money; inflation; income and interest determination; IS-LM functions; monetary and fiscal policies; economic reforms .

#### **Unit 2: Agricultural Development and Policy**

Role of agriculture in economic development; economic growth and development; present development challenges; theories of development; role of economic, technological social, political and environmental factors; nature, sources and impact of technological change; agricultural development in Asia; poverty, inequality and development; growth models- Harrod-Domar, Neo-Classical, Rostow's growth stages, Lewis-Fei-Ranis model; human capital, technology, trade and development; development strategies in India; five-year plans and agriculture; land reforms; theory of share tenancy; institutions and development; agricultural growth analysis-determinants of agricultural growth and their measurements; features of planning in capitalist, socialist and mixed economies; role of infrastructure and technological change; agricultural policy analysis and reforms - input and output price policy; rural and irrigation infrastructure; credit policy etc; policies and programmes for development of agro-industry, dairy and fisheries; measurement of poverty and poverty alleviation programmes.

#### **Unit 3: Natural Resource and Production Economics**

Characteristics and classification of natural resources, sustainability issues in natural resources; role of economics in natural resources accounting, planning, management and policy formulation; social welfare function; allocation of renewable and non-renewable resources (forests, fisheries, minerals, water, land, etc.) under various market structure; valuation of non-market resources; government programmes for conservation and development of natural resources; basic principles of farm management-marginal returns, opportunity cost, input-output, output-output and input-input relationships; time comparison and comparative advantage; cost principles ; farm efficiency measures and financial analysis, farm planning and budgeting; farm records; measurement and management of risk and uncertainty in agriculture; diversification and insurance in agriculture and allied sectors; forms and applications of production functions – linear, quadratic, square root, spillman, cubic, semi-log, Cobb-Douglas, constant elasticity of substitution (CES), variable elasticity of substitution (VES), etc; dualities between production, cost and profit functions; derivation of supply and factor demand functions from production and profit functions, optimization of resource allocation, resource-use efficiency and returns to scale, frontier production function; total factor productivity; decision making under risk and uncertainties.

#### **Unit 4: Agricultural Finance and Project Management**

Importance of agricultural finance, objectives, functions and principles of agricultural finance; sources of capital acquisition; rural credit structure-demand, supply, credit-gap; classification of agricultural credit-sources and forms; cost of credit/capital; credit appraisal-3Rs, 3Cs and 7Ps of credit; estimation of credit requirement; reforms in agricultural credit policy; financial system in India-commercial banks, cooperatives, RRBs, micro-finance institutions (MFIs), global financial institutions; innovations in agricultural financing-microfinance, kisan credit cards; SHGs; definition and characteristics of projects; need for project approach for agricultural development; SWOT analysis and project identification, project life cycle; project feasibility-market, technical, financial and economic feasibility; social cost-benefit analysis; project risk analysis; project scheduling and resource allocation; financial and economic appraisal/measures - net present value (NPV), internal rate of return (IRR), benefit- cost ratio (BCR); network analysis – PERT & CPM; fundamental of accounting and book-keeping; analysis of financial statements-balance sheet, income statement cash flow statement.

#### **Unit 5: Agricultural Marketing and Price Analysis**

Concepts of agricultural marketing,; marketing functions-processing , transportation , storage and warehousing; channels of marketing agricultural produce-price spread and efficiency; structure, conduct and performance analysis; market integration; marketing institutions-role and functions; government interventions including administrated price policy ; regulated markets, market segmentation ; buffer stock operations, price stabilization measures and policies etc; marketing of agricultural inputs; role of private sector in input and output marketing; forward trading and futures market, commodity boards and contract farming; marketed surplus models; competitive and comparative advantage in trade, trade policies , models and agreements; regulations and reforms for marketing and trade, WTO, SPS measures and competitiveness; ecological concerns and marketing ethics.

#### **Unit 6: Operations Research and Research Methods**

Objectives, types, and process of research; role and uses of quantitative techniques in business decision making; sampling techniques and sample size determination; sampling and non-sampling errors; index numbers, hypothesis testing, ANOVA, factor analysis, cluster analysis; measures of central tendency, measures of variation, skewness and kurtosis; correlation and regression; discriminant and dummy variable analysis; OLS estimation-assumptions and their violations, properties; simultaneous equations systems-identification and estimation; Linear programming: objective, assumptions, formulation of linear programming problem, simplex, method; primal and dual LP problems; role of business decision making models.

## **46. Agri Business Management**

### **Unit 1: General Management**

Management processes, planning, controlling, organizing, motivating; managerial skills; level of managers; decision making; organizational context of decisions; decision making models; management by objectives; organizational conflicts; managing change; leadership styles; group dynamics. Human resource planning, job analysis and design; recruitment, selection, induction and placement; human resource training and development; management development; performance management; wage and salary administration; promotions, transfers, separation, absenteeism and employee turnover, employee welfare and safety; morale; participative management; introduction to industrial relations; conflict management. Case analysis forms a part of this unit.

### **Unit 2: Business Accounting & Financial Management**

Financial Accounting- Meaning, Need, Concepts and Conventions; Advantages and Limitations , Standards of financial accounting; The Double Entry System- Its Meaning, Scope and Operation, Analysis of Financial Statements- Ratios, Comparative and Common Size Statements, Cash Flow and Funds Flow Analysis. Cost Accounting – Significance of Cost Accounting; Classification of Cost; Marginal Costing and Cost Volume Profit Analysis; Standard Costing and Variance Analysis- Material, Labour and Overhead; CPP and CCA Methods; Budget and Budgetary Control; Objectives and functions of financial management; capital structure theories; working capital management; dividend decision; Capital Budgeting and Project Appraisal criteria- NPV, ARR, IRR, Benefit Cost (B-C); Project feasibility- market feasibility, technical feasibility, financial feasibility, and economic feasibility, social cost-benefit analysis, project risk analysis. Importance of agricultural finance; rural credit structure-demand, supply, sources and forms; estimation of credit requirement; cost of credit/capital; credit appraisal- 3 Rs and 3 Cs of credit; reforms in agricultural credit policy; innovations in agricultural financing; role of institutions in agricultural; cooperatives, micro-finance institutions (MFIs), SHGs; principles of agricultural financial management; successes and failures of rural finance co-operative sector in India. Numerical analysis forms a part of this unit.

### **Unit 3: Marketing Management**

Marketing Orientation; consumer behavior; marketing information system; formulating marketing strategy i.e. segmentation, targeting and positioning; marketing mix decisions; marketing organization; wholesaling and retailing ; challenges of international marketing. Agricultural marketing system, market structure; marketable and marketed surplus; marketing functions; channels in marketing, price spread and efficiency; government interventions including regulated markets, procurement, buffer stock operations, co-operative marketing, price stabilization measures and policies ; pricing of agricultural goods and marketing policies; public distribution system and related policies; rural retailing; forward trading and futures markets; marketing of agricultural inputs; challenges of marketing in rural areas; challenges of marketing goods manufactured in rural areas. Case analysis forms a part of this unit.

#### **Unit 4: Managerial Economics and Farm Management**

Scope of managerial economics, objective of the firm and basic economic principles; Consumer theory; Demand analysis; demand function; demand elasticity; demand forecasting. Production, cost and supply analysis- production function, least-cost input combination, factor productivities and returns to scale, cost concepts, cost-output relationship, Pricing. National income; circular flow of income: consumption, investment and saving: money-functions, demand & supply; inflation; economic growth; basics of business cycles. Farm Management problems and decisions; Farm Management principles; Farm planning and budgeting; Risk and Uncertainty in Farming; Overview of management of poultry & hatchery, fishery, livestock, feed, seed production, agrochemicals, farm power and machinery, veterinary hospital, floriculture and landscaping businesses. Case analysis forms a part of this unit.

#### **Unit 5: Quantitative Techniques**

Linear Programming: Objective, Assumptions, Formulation of Linear Programming Problem, Graphic Method, Simplex method; Transportation and Assignment Problems; Inventory Control Models; Waiting Line Models; Decision making under risk and uncertainties; Game Theory - Two -Person Zero-Sum Game; Simulation; Project's life cycle and Network analysis –PERT & CPM. Objectives, types, and process of research; types of research in management- exploratory, descriptive, experimental; Problem formulation; Scales of measurement; Primary and secondary data; Sampling and sampling techniques. Use of Equations, Use of Determinants and Matrices in business decisions, Frequency Distribution, Measures of Central Tendency, Measures of Variation, Skewness and Kurtosis, Simple, partial, and multiple correlation, Rank correlation, Simple and Multiple regression, Discriminant and dummy variable analysis, Index Numbers, Hypothesis testing, ANOVA, Statistical Quality Control. Numerical analysis forms a part of this unit.

#### **Unit 6: Strategic Management and Entrepreneurship**

Role of agriculture in Indian economy; problems and policies relating to farm supplies, farm production, agro processing, agricultural marketing, agricultural finance etc. in the country. Agribusiness – definition and nature, components of agribusiness management, changing dimensions of agricultural business; Structure of Agriculture - Linkages among sub-sectors of the agribusiness sector; economic reforms and Indian agriculture; impact of liberalization, privatization and globalization on agribusiness sector; Trends in production, processing, marketing, exports, policy controls and regulations relevant to the industrial sector with specific reference to agro-industries; Policies for agribusinesses - concept and formulation; new dimensions in Agribusiness environment and policy. International trade- basic concepts, WTO and its implications for Indian Economy in general and agriculture sector in particular. Strategic management – meaning, concept and scope; process of strategic management; strategic analysis i.e. SWOT analysis; strategy formulation; strategy implementation- strategy and structure, strategy and procedural implementation, strategy and leadership, total quality management, creating competitive advantage, strategic evaluation. Significance of entrepreneurship in economic development, qualities of an entrepreneur, environmental factors affecting success of a new business, strategy formulation for new businesses, life cycles of new business, reasons for the failure and visible problems for business, Characteristics of an effective business plan. Case analysis forms a part of this unit.