



PROF. RAJENDRA SINGH (RAJU BHAIYA) UNIVERSITY, PRAYAGRAJ

DOCTORAL ENTRANCE TEST (DET)

SESSION : 2022-2023 ONWARDS

DET Syllabus

SUBJECT: AGRICULTURAL ECONOMICS

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 failure; nature of macroeconomic analysis; national income; consumption; saving and investment, employment, theory of business cycle, functions and demand for money; inflation; income and interest determination; IS-LM functions; **general equilibrium analysis**; 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; **Green GNP**, 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, **induced innovation model**, 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 capitalists, socialist and mixed economics; 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; **policy options for sustainable agriculture development**, measurement of poverty and poverty alleviation programmes.

Unit 3: Natural Resource and Production Economics

Characteristics and classification of natural resources, sustainability issues in natural resource, **property rights, externalities, transaction costs, need for collective action**, 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; **climate changes, mitigation and policies, environmental regulations** 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, objective, 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, 3 Cs and 7Ps of credit, estimation of credit requirement; **supervisory credit system**, 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; **e-banking, credit inclusion**, 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, **choice of discount rate**, - net present value (NPV), internal rate of return (IIR), 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 ware housing; 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, marker segmentation, **supply chain and value chain analysis in agril. commodities**, buffer stock operations, price stabilization measures and policies etc. **price forecasting for crop area allocation**, marketing of agricultural inputs, role of private sector in input and output marketing; forward trading and futures market e-NAM, 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

Objective, types and process of research; role and uses of quantitative technique 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, **MLE** 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.