

25. SYLLABUS FOR COMPETITIVE EXAMINATION FOR THE POST OF TEACHING ASSOCIATE IN AGRICULTURAL ECONOMICS

Unit 1: Economic Theory –

Basic concepts of micro and macroeconomics; economic theory, nature and tools of economic analysis; theory of consumer behaviour; production theory; costs theory; theory of firm; price determination under different market forms, price discrimination, effects of taxation and subsidies under different market conditions monopoly, duopoly, Cournot model, oligopoly; 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; Theories of agricultural development; growth models – Harrod-Domar, Neo- Classical, Rostow's growth stages, five-year plans and agriculture; land reforms; institutions and development; agricultural growth analysis determinants of agricultural growth and their measurements; features of planning in capitalists, socialist and mixed economies; role of infrastructure and technological change; agricultural policy analysis and reforms – input and output price policy, 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 Environmental Economics–

Characteristics and classification of natural resources, sustainability issues in natural resources, sources and types of pollution – air, water, solid waste, land degradation environmental and economic impacts; 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; environmental regulations.

Unit 4: Production Economics-

Concepts of production economics; 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; management of risk and uncertainty in agriculture; diversification and insurance in agriculture and allied sectors; yield gap analysis, forms, characteristics and applications of production functions – linear, quadratic, square root, spillover, cubic, semi-log, Cobb-Douglas, Constant Elasticity of Substitution (CES), Variable Elasticity Of Substitution (VES) etc; 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 5: Agricultural Finance–

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 – NABARD, commercial banks, cooperatives- cooperative movement in India- organization, structure and development of different types of cooperatives in India, RRBs,

Micro-Finance Institutions (MFIs), NGOs, and SHGs; innovations in agricultural financing microfinance, Kisan credit cards; e-banking.

Unit 6: Project Management –

Definition and characteristics of projects; need for project approach for agricultural development; SWOT analysis and project identification, project life cycle, project feasibility- 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 (IRR), Benefit-Cost Ratio (BCR); network analysis – PERT & CPM; fundamentals of accounting and book-keeping; analysis of financial statements- balance sheet, income statement, cash flow statement, etc.

Unit 7: Agricultural Marketing and Price Analysis–

Concepts of agricultural marketing; marketing functions- buying and selling, processing, transportation, financing, grading, market information, 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 administered price policy; regulated markets, farmer- producer companies, market segmentation, supply chain and value chain analysis in agricultural commodities, buffer stock operations, price stabilization measures and policies etc; use of information technology and market intelligence, price forecasting, marketing of agricultural inputs, role of private sector in input and output marketing; forward trading and futures market; e-NAM and marketing under 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 8: Operations Research and Research Methods–

Importance and scope of research in agricultural economics, 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- meaning, types and testing. Data analysis, ANOVA, factor 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 equation systems- identification and estimation; Linear programming objective, assumptions, formulation of linear programming problem, simplex method- primal and dual problems, role of business decision making models.

Unit 9: Econometrics-

Nature and scope of econometrics: relationship between economic theory, mathematical economics, models and econometrics, methodology of econometrics; regression analysis; two variable regression– assumptions, estimation and interpretation; assumptions and estimation of OLS and their properties – extensions to multi-variable models; multiple regression, estimation and interpretation; violation of assumptions– identification, consequences and remedies for multi-collinearity, heteroscedasticity, autocorrelation; data problems and remedial approaches; model mis-specification; use of dummy variables; types and estimation of simultaneous equation models; identification problem.