



CHEZHIAN IAS ACADEMY

The Best Academy for Civil Service Examination

SYLLABUS – AGRICULTURAL OFFICER (EXTENSION)

PAPER-I AGRICULTURE (DEGREE STANDARD)

UNIT- I: IMPORTANCE OF AGRICULTURE

Importance of Agriculture in Indian Economy and its sectoral relationship - Agricultural Development through five year plans in India and Tamil Nadu - Growth pattern of crops in India and Tamil Nadu in terms of area, production and productivity - Government Agricultural Policies – Agricultural development through NITI AYOOG – Import and export – Role of NSC, FCI and PDS.

UNIT - II: FUNDAMENTALS OF CROP PRODUCTION

Factors of Production - Agricultural seasons of India and Tamil Nadu - Cropping patterns in India and Tamil Nadu - Package of practices of different crops - Agro-Climatic zones of India and Tamil Nadu and their features - Weather and Climate - Weather forecasting - Climate change and its impact – Minimal tillage practices – Stress mitigating technologies including microorganisms – Nanoparticles and their applications.

UNIT - III: NATURAL RESOURCE MANAGEMENT

Soil - Soil structure - Factors influencing soil structure - Physical and Chemical properties - Effect of nutrient availability and plant growth - Problem soils and their management - Soil survey - Its objectives and scope - Soil fertility and productivity - Dry farming - Rainfed agriculture - Conservation of soil and water - Watershed and waste land development. Land use pattern and planning - Size and distribution of holdings - Types and systems of farming - Water resources development and management - Command area development - Ground water Development and Conjunctive use - Water use efficiency - Quality of irrigation water - Its effect in soil and crops - Management of poor quality water for crop growth.

UNIT - IV: CROP MANAGEMENT & ALLIED AGRICULTURAL ACTIVITIES

Cropping systems and integrated farming - Recycling of agricultural waste - Organic manures, green manures, bio fertilizers - Balanced usage - Integrated nutrient management - Physiological disorders in crop plants and their management- Irrigation management of different crops Mushroom cultivation, bee keeping, silkworm rearing etc., Energy in Agricultural production - Sources - Solar, wind, animal, biomass and biogas - Mechanization in agriculture - Tractors & tillers - Agricultural implements and Machineries and their usage - livestock and poultry rearing.

UNIT - V: CROP IMPROVEMENT

Principles of breeding - Breeding methods in self , cross and vegetatively propagated crops - Modern tools in crop improvement – Heterosis breeding and Hybrid seed production technologies - Latest varieties of major crops in Tamil Nadu - Breeding for climate resilience varieties – Variety release procedures - Application of bio technology in agriculture - Tissue culture & its significance - Transgenic Plants. Plant Genetic Resources:Collection conservation and exchange-Crop varietal protection-PPV& FR authority and its role.

UNIT- VI: SEED SCIENCE AND TECHNOLOGY

Seeds - Importance of quality seeds in agriculture – Nucleus, breeder, foundation, certified and labelled seeds - Seed certification techniques and processing in Tamil Nadu - Seed testing – Seed testing laboratories-ISTA standards for seed testing - Seed village concept Seed Act - Seed coating and priming technologies - Seed enhancement technologies.

UNIT – VII: CROP PROTECTION PRINCIPLES AND PRACTICES

Importance of pest, disease, nematodes and weed management in agriculture – categories of pests, diseases, nematodes and weeds - Pest and disease surveillance and forecasting weather on pest and disease incidence - Symptoms of damages and control measures of pest, disease and nematodes of major crops in Tamil Nadu - Integrated pest, disease and nematode management in crop production - Pesticides and their use in IPM – Mode of action - Pattern - Plant protection equipments and their use - Plant quarantine. Storage pests, disease and nematodes and their management. Importance of biological control in pest, disease and nematode management. Weeds - Major weeds and their control.

UNIT – VIII: FARM BUSINESS AND FINANCE MANAGEMENT

Farm business management - Principles of farm business management – Types and systems of farms-Classical production functions - Cost concepts - Management of resources - Farm Planning and budgeting - Investment analysis – Risk and uncertainties in agriculture - Agricultural credit system in India - Multi credit delivery system - Role of nationalized banks, NABARD and Regional Rural Banks - Lead Bank Scheme - Service area approach - Scale of finance-Credit Worthiness-3 Rs,5Cs and 7Ps of credit- Crop Insurance - Kisan Credit Cards (KCC) - Agricultural Insurance Company.

UNIT – IX: AGRICULTURAL MARKETING AND MARKET INTELLIGENCE

Marketing - Agricultural marketing - Market structure – Marketing efficiency - Price Spread-Market Integration-Market Risk-Speculation and hedging - Market Institutions- Warehouses and rural godowns - Agmark-Cooperatives - Commodity Boards – Agri business management – Principles of Management-Entrepreneurship Development - Forms of Business organizations - Agricultural Price Policy - CACP-MSP - FRP- Procurement Price- Policies for agricultural development - Economic liberalization - WTO and its impact on agricultural export - Importance of Agriculture in Indian economy - Land size and distribution of holdings and land use pattern in Tamil Nadu - Agriculture under Five year Plans (FYPs) - Food Security - Public Distribution Systems (PDS) - Buffer Stock.

UNIT - X: AGRICULTURAL EXTENSION: PRINCIPLES AND METHODS

Extension methods for transfer of technology - AV aids-Communication models - Use of ICT in transfer of technology-Diffusion and adoption- Pre and post independence rural development initiatives: key features, strength and weakness of individual programmes - Programme planning and evaluation methods- Rural sociology - Key features of Indian rural system-Value system-Social change- Rural migration. Role of women in agriculture.

PAPER-II**GENERAL STUDIES (DEGREE STANDARD)****UNIT - I: GENERAL SCIENCE**

Physics Universe-General Scientific laws-Scientific instruments-Inventions and discoveries-National scientific laboratories-Science glossary-Mechanics and properties of matter-Physical quantities, standards and units-Force, motion and energy-Electricity and Magnetism, Electronics and Communication -Heat, light and sound-Atomic and nuclear physics-Solid State Physics – Spectroscopy- Geophysics - Astronomy and space science.

Chemistry Elements and Compounds-Acids, bases and salts-Oxidation and reduction-Chemistry of ores and metals-Carbon, nitrogen and their compounds-Fertilizers, pesticides, insecticides-Biochemistry and biotechnology-Electrochemistry-Polymers and plastics.

Botany Main concepts of life science-The cell-basic unit of life-Classification of living organism-Nutrition and dietetics-Respiration-Excretion of metabolic waste-Bio- communication.

Zoology Blood and blood circulation-Endocrine system-Reproductive system-Genetics the science of heredity-Environment, ecology, health and hygiene, Bio- diversity and its conservation-Human diseases-Communicable diseases and non- communicable diseases-prevention and remedies- Alcoholism and drug abuse-Animals, plants and human life.

UNIT - II: CURRENT EVENTS

History Latest diary of events – National symbols-Profile of States-Defence, national security and terrorism-World organizations-pacts and summits-Eminent persons & places in news-Sports & games-Books & authors -Awards & honours-Cultural panorama-Latest historical events - India and its neighbours - Latest terminology- Appointments-who is who?

Political Science 1. India's foreign policy 2. Latest court verdicts – public opinion 3. Problems in conduct of public elections 4. Political parties and political system in India 5. Public awareness & general administration 6. Role of voluntary organizations & govt., 7. Welfare oriented govt. schemes, their utility

Geography Geographical landmarks -Policy on environment and ecology.

Economics Current socio-economic problems-New economic policy & govt. sector

Science Latest inventions on science & technology-Latest discoveries in Health Science-Mass media & communication.

UNIT - III: GEOGRAPHY

Earth and Universe - Solar system-Atmosphere hydrosphere, lithosphere - Monsoon, rainfall, weather and climate - Water resources - Rivers in India-Soil, minerals & natural resources - Natural vegetation - Forest & wildlife-Agricultural pattern, livestock & fisheries -Transport including Surface transport & communication - Social geography – population -density and distribution-Natural calamities – disaster management-Climate change - Impact and consequences - Mitigation measures - Pollution Control.

UNIT - IV: HISTORY AND CULTURE OF INDIA

Pre-historic events -Indus valley civilization-Vedic, Aryan and Sangam age-Maurya dynasty-Buddhism and Jainism-Guptas, Delhi Sultans, Mughals and Marathas-Age of Vijayanagaram and the Bahmanis-South Indian history - Culture and Heritage of Tamil people-Advent of European invasion-Expansion and consolidation of British rule - Effect of British rule on socio-economic factors-Social reforms and religious movements - India since independence-Characteristics of Indian culture-Unity in diversity – race, colour, language, custom-India-as secular state-Organizations for fine arts, dance, drama, music-Growth of rationalist, Dravidian movement in TN-Political parties and populist schemes- Prominent personalities in the various spheres – Arts, Science, literature and Philosophy – Mother Teresa, Swami Vivekananda, Pandit Ravishankar, M.S.Subbulakshmi, Rukmani Arundel and J.Krishnamoorthy etc.

UNIT - V: INDIAN POLITY

Constitution of India - Preamble to the constitution- Salient features of constitution- Union, State and territory- Citizenship-Rights and duties- Fundamental rights- Fundamental duties- Human rights charter- Union legislature – Parliament- State executive- State Legislature – assembly- Status of Jammu & Kashmir- Local government – panchayat raj – Tamil Nadu- Judiciary in India – Rule of law/Due process of law- Indian federalism – center – state relations-. Emergency provisions- Civil services in India- Administrative challenges in a welfare state- Complexities of district administration- Elections - Election Commission Union and State. Official language and Schedule-VIII- Amendments to constitution- Schedules to constitution-. Administrative reforms & tribunals- Corruption in public life- Anti-corruption measures – Central Vigilance Commission, lok-adalats, Ombudsman, - Comptroller and Auditor General of India- Right to information - Central and State Commission- Empowerment of women- Voluntary organizations and public grievances redressal- Consumer protection forums.

UNIT - VI: INDIAN ECONOMY

Nature of Indian economy-Need for economic planning-Five-year plan models-an assessment-Land reforms & agriculture-Application of science in agriculture Industrial growth-Capital formation and investment-Role of public sector & disinvestment-Development of infrastructure-National income- Public finance & fiscal policy- Price policy & public distribution- Banking, money & monetary policy- Role of Foreign Direct Investment (FDI)- WTO-globalization & privatization- Rural welfare oriented programmes- Social sector problems – population, education, health, employment, poverty-HRD – sustainable economic growth- Economic trends in Tamil Nadu -Energy - Different sources and development- Finance Commission -Planning

Commission- National Development Council.

UNIT - VII: INDIAN NATIONAL MOVEMENT

National renaissance-Early uprising against British rule-1857 Revolt- Indian National Congress-Emergence of national leaders-Gandhi, Nehru, Tagore, Nethaji -Growth of militant movements -Different modes of agitations-Era of different Acts & Pacts-World war & final phase struggle-Communalism led to partition-Role of Tamil Nadu in freedom struggle - Rajaji, VOC, Periyar, Bharathiar & Others-Birth of political parties /political system in India since independence.

UNIT - VIII: APTITUDE AND MENTAL ABILITY TESTS

Conversion of information to data-Collection, compilation and presentation of data - Tables, graphs, diagrams-Parametric representation of data-Analytical interpretation of data - Simplification-Percentage-Highest Common Factor (HCF)-Lowest Common Multiple (LCM)- Ratio and Proportion-Simple interest-Compound interest-Area-Volume-Time and Work-Behavioural ability -Basic terms, Communications in information technology-Application of Information and Communication Technology (ICT)- Decision making and problem solving- Logical Reasoning-Puzzles-Dice-Visual Reasoning-Alpha numeric Reasoning-Number Series- Logical Number/Alphabetical/Diagrammatic Sequences.