

AGRICULTURE OPTIONAL IFOS TEST SCHEDULE 2024



Features:

- Consistently producing **UPSC Toppers with Agriculture Optional** for the last 9 years.
- Carefully designed test schedule to achieve **270+** in the Optional paper.
- There will be total 13 Tests divided into **(4 Sectional test and 4 Full Syllabus Tests)**
- **More than 75% of the questions** reflected in IFoS 2023.
- All the test papers are equivalent with the UPSC Mains exam pattern
- **Detailed Answers for all questions** and **Model Answers** of Faculty will be provided
- **Toppers' Answer copy** will be shared in the test batch telegram channel.
- One-on-one feedback with Faculty
- Fee – Rs.7,000 for New Students. Rs.6,500 for Old Students.

Test Schedule

Test No	Date	Detailed Syllabus	Reference Books
1.	13.10.2024	<p>Ecology and Environment</p> <ul style="list-style-type: none"> Ecology and its relevance to man, natural resources, their sustainable management and conservation. Physical and social environment as factors of crop distribution and production. Agro ecology; cropping pattern as indicators of environments. Environmental pollution and associated hazards to crops, animals and humans. Climate change—International conventions and global initiatives. Green house effect and global warming. Advance tools for ecosystem analysis—Remote Sensing (RS) and Geographic Information Systems (GIS). <p>Cropping System</p> <ul style="list-style-type: none"> Cropping patterns in different agro-climatic zones of the country. 	<p>Agriculture Material by R.Kanagaraj</p> <p>Or</p> <ul style="list-style-type: none"> Ecology and Environment - P.D.Sharma NCERT – 12th Biology Chapter Ecology Agritech portal by TNAU Principles of Agronomy – Yellamandha Reddy

- Impact of high-yielding and short duration varieties on shifts in cropping patterns.
- Concepts of various cropping, and farming systems.
- Organic and Precision farming.
- Package of practices for production of important cereals, pulses, oil seeds, fibres, sugar, commercial and fodder crops.

Forestry

- Important features and scope of various types of forestry plantations such as social forestry, agroforestry, and natural forests.
- Propagation of forest plants.
- Forest products.
- Agroforestry and value addition.
- Conservation of forest flora and fauna.

Weed Science

- Weeds, their characteristics, dissemination and association with various crops; their multiplications;
- Cultural, biological, and chemical control of weeds.

Irrigation Management

- Water-use efficiency in relation to crop production,

- Criteria for scheduling irrigations,
- Ways and means of reducing run-off losses of irrigation water.
- Rainwater harvesting.
- Drip and sprinkler irrigation.
- Drainage of water-logged soils,
- Quality of irrigation water,
- Effect of industrial effluents on soil and water pollution.
- Irrigation projects in India.

2. 20.10.2024

Cell Biology, Genetics and Plant Biotechnology

- Cell structure, function and cell cycle.
- Synthesis, structure and function of genetic material.
- Laws of heredity.
- Chromosome structure, chromosomal aberrations.
- Linkage and cross-over, and their significance in recombination breeding.
- Polyploidy, euploids and aneuploids.
- Mutation and their role in crop improvement.
- Heritability, sterility and incompatibility, classification and their application in crop improvement.
- Cytoplasmic inheritance

**Agriculture Optional
Material by
R.Kanagaraj**

Or

- Fundamentals of Genetics – B.D. Singh
- Plant Breeding Principles and Methods – B.D.Singh
- Seed Technology – R.L.Agarwal

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- Sex-linked, sex-influenced and sex-limited characters.
 - Role of genetic engineering and biotechnology in crop improvement Genetically modified crop plants.

Plant Breeding

- History of plant breeding.
 - Modes of reproduction,
 - Selfing and crossing techniques.
 - Origin, evolution and domestication of crop plants,
 - Centre of origin, law of homologous series,
 - Crop genetic resources - conservation and utilization.
 - Application of principles of plant breeding, improvement of crop plants.
 - Molecular markers and their application in plant improvement.
 - Pure-line selection, pedigree, mass and recurrent selections,
 - Combining ability, its significance in plant breeding.
 - Heterosis and its exploitation.
 - Somatic hybridization.
 - Breeding for disease and pest resistance.
 - Role of interspecific and intergeneric hybridization
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Seed Technology

- Seed production and processing technologies.
- Seed certification, Seed testing and storage.
- DNA finger printing and seed registration.
- Role of public and private sectors in seed production, and marketing.
- Intellectual Property Rights (IPR) issues
- WTO issues and its impact on Agriculture.

3. 27.10.2024

Soil Science

- Soil—physical, chemical and biological properties.
- Processes and factors of soil formation.
- Soils of India.
- Mineral and organic constituents of soils and their role in maintaining soil productivity

Nutrient Management

- Essential plant nutrients and other beneficial elements in soils and plants.
- Principles of soil fertility, soil testing and fertiliser recommendations.

Agriculture **Optional**

Material **by**

R.Kanagaraj
Or

- Principles of Agronomy – Yellamandha Reddy
- Introductory Soil Science – Dilip Kumar Das
- Economics of Farm Production and

- Integrated nutrient management
- Biofertilizers
- Losses of nitrogen in soil, nitrogen-use efficiency in submerged rice soils, nitrogen fixation in soils.
- Efficient phosphorus and potassium use.
- Problem soils and their reclamation.
- Soil factors affecting green house gas emission.

Management – VT
Raju

- Hand Book of Agricultural Extension – ICAR

Soil and Water Conservation and Dryland Agriculture

- Soil conservation, integrated watershed management.
- Soil erosion and its management.
- Dry land agriculture and its problems.
- Technology for stabilising agriculture production in rainfed areas.

Farm Management

- Farm management, scope, importance and characteristics,
- Farm planning. Optimum resource use and budgeting.
- Economics of different types of farming systems.
- Marketing management strategies for development,
- Market intelligence.
- Price fluctuations and their cost;
- Role of co-operatives in agricultural economy;

- Types and systems of farming and factors affecting them.
- Agricultural price policy.
- Crop Insurance.

Agricultural Extension

- Agricultural extension, its importance and role,
- Methods of evaluation of extension programmes,
- Socio-economic survey and status of big, small and marginal farmers and landless agricultural labourers;
- Training programmes for extension workers.
- Role of Krishi Vigyan Kendra's (KVK) in dissemination of Agricultural technologies.
- Non-Government Organisation (NGO) and self-help group approach for rural development.

4. 03.11.2024

Plant Physiology

- Principles of Plant Physiology with reference to plant nutrition, absorption, translocation and metabolism of nutrients.
- Soil-water-plant relationship.
- Enzymes and plant pigments;
- Photosynthesis—modern concepts and factors affecting the process,

**Agriculture Optional
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Or

Fundamentals of Plant
Physiology – V.K.Jain

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- Aerobic and anaerobic respiration;
 - C3, C4 and CAM mechanisms.
 - Carbohydrate, protein and fat metabolism.
 - Growth and development; photoperiodism and vernalization.
 - Plant growth substances and their role in crop production.
 - Physiology of seed development and germination; dormancy.
 - Stress physiology—drought, salt and water stress.

Entomology and Pathology

- Diagnosis of pests and diseases of field crops, vegetables, orchard and plantation crops and their economic importance.
- Classification of pests and diseases and their management.
- Integrated pest and diseases management.
- Storage pests and their management.
- Biological control of pests and diseases.
- Epidemiology and forecasting of major crop pests and diseases.
- Plant quarantine measures.

Pesticides, their formulation and modes of action.

- Introduction to Horticulture – N.Kumar
- Hand Book of Horticulture - ICAR
- Plant Pathology – R.S.Mehrotra
- Elements of Economic Entomology – Vasantharaj David
- ICAR – E-courses Agriculture website Agritech Portal by TNAU

Horticulture

- Major fruits, plantation crops, vegetables, spices and flower crops.
- Package practices of major horticultural crops.
- Protected cultivation and high tech horticulture.
- Post-harvest technology and value addition of fruits and vegetables.
- Landscaping and commercial floriculture.
- Medicinal and aromatic plants.
- Role of fruits and vegetables in human nutrition.

Food Security

Food production and consumption trends in India. Food security and growing population – vision 2020. Reasons for grain surplus. National and international food policies. Production, procurement, distribution constraints. Availability of food grains, per capita expenditure on food. Trends in poverty, Public Distribution System and Below Poverty Line population, Targeted Public Distribution System (PDS), policy implementation in context to globalization. Processing constraints. Relation of food production to National Dietary Guidelines and food consumption pattern. Food based dietary

approaches to eliminate hunger. Nutrient deficiency –
Micronutrient deficiency: Protein Energy Malnutrition or
Protein Calorie Malnutrition (PEM or PCM), Micro nutrient
deficiency and HRD in context of work capacity of women and
children. Food grain productivity and food security.

05. 10.11.2024

Full Mock Test-I
Fore Noon - Paper I
After Noon – Paper II

06. 17.11.2024

Full Mock Test-II
Fore Noon - Paper I
After Noon – Paper II
