

# Syllabus of Optional AGRICULTURE (CSE Mains) Paper –I

I	Paper I Natural Resource Management	Reading Reference
<b>A1</b>	<b>Agronomy &amp; Crop Production</b>	
A.	Ecology and its relevance to man, natural resources, their sustainable management and conservation.	
B.	Physical and social environment as factors of crop distribution and production.	
C.	Agro ecology;	
D.	Cropping pattern as indicators of environments.	
E.	Environmental pollution and associated hazards to crops, animals and humans.	
F.	Climate change – International conventions and global initiatives.	
G.	Green house effect and global warming.	
H.	Advance tools for ecosystem analysis – Remote sensing (RS) and Geographic Information Systems (GIS).	
I.	Cropping patterns in different agro-climatic zones of the country.	
J.	Impact of high-yielding and short-duration varieties on shifts in cropping patterns.	
K.	Concepts of various cropping and farming systems.	
L.	Organic and Precision farming.	
M.	Package of practices for production of important cereals, pulses, oil seeds, fibres, sugar, commercial and fodder crops.	
<b>A2</b>	<b>Forestry &amp; Agroforestry</b>	
A.	Important features and scope of various types of forestry plantations such as social forestry, agro-forestry, and natural forests.	
B.	Propagation of forest plants.	
C.	Forest products.	
D.	Agro forestry and value addition.	
E.	Conservation of forest flora and Fauna	
<b>A3</b>	<b>Weed Management</b>	
A.	Weeds,	
B.	Characteristics of Weeds,	
C.	Dissemination and association of Weeds with various crops;	
D.	Multiplications of Weeds;	
E.	Cultural, biological and chemical control of weeds.	
<b>A4</b>	<b>Soil Science</b>	
A.	Soil- physical, chemical and biological properties.	
B.	Processes and factors of soil formation.	
C.	Soils of India.	
D.	Mineral and organic constituents of soils and their role in maintaining soil productivity.	
E.	Essential plant nutrients and other beneficial elements in soils and plants.	
F.	Principles of soil fertility,	
G.	Soil testing and fertilizer recommendations,	
H.	Integrated nutrient management.	
I.	Biofertilizers.	
<b>J.</b>	Losses of nitrogen in soil,	
K.	Nitrogen-use efficiency in submerged rice soils, nitrogen fixation in soils.	
L.	Efficient phosphorus and potassium use.	
M.	Problem soils and their reclamation.	
N.	Soil factors affecting greenhouse gas emission.	
O.	Soil conservation,	

P.	Integrated watershed management.	
Q.	Soil erosion and its management.	
<b>A5</b>	<b>Dryland Agriculture</b>	
A.	Dry land agriculture and its problems.	
B.	Technology for stabilizing agriculture production in rain fed areas.	
C.	Water-use efficiency in relation to crop production,	
D.	Criteria for scheduling irrigations, ways and means of reducing run-off losses of irrigation water.	
E.	Rainwater harvesting.	
F.	Drip and sprinkler irrigation.	
G.	Drainage of waterlogged soils,	
H.	Quality of irrigation water,	
I.	Effect of industrial effluents on soil and water pollution.	
J.	Irrigation projects in India.	
<b>A6</b>	<b>Agricultural Economy:</b>	
A.	Farm management, scope, importance and characteristics, farm planning.	
B.	Optimum resource use and budgeting.	
C.	Economics of different types of farming systems.	
D.	Marketing management – strategies for development, market intelligence.	
E.	Price fluctuations and their cost;	
F.	Role of co-operatives in agricultural economy;	
G.	Types and systems of farming and factors affecting them.	
H.	Agricultural price policy.	
I.	Crop Insurance	
<b>A7</b>	<b>Agricultural extension:</b>	
A.	Agricultural extension,	
B.	Its importance and role,	
C.	Methods of evaluation of extension programmes,	
D.	Socioeconomic survey and status of big, small and marginal farmers and landless agricultural labourers.	
E.	Training programmes for extension workers.	
F.	Role of Krishi Vigyan Kendra's (KVK) in dissemination of Agricultural technologies.	
G.	Non Government Organization (NGO) and self-help group approach for rural development.	

## Standard Reference Books:

Sl	Book Name and Authors	Code No
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