

[Total No. of Pages : 6

Roll No _____

1(CCE-M)4

AGRICULTURE - I

[01]

Time : 3 Hours

Maximum Marks : 300

INSTRUCTIONS

- i) *Answer must be written in English.*
- ii) *The number of marks carried by each question is indicated at the end of the question.*
- iii) *The answer to each question or part thereof should begin on a fresh page.*
- iv) *Your answer should be precise and coherent.*
- v) *The part/parts of the same question must be answered together and should not be interposed between answers to other questions.*
- vi) ***Candidates should attempt question No : 1 which is compulsory and any four more out of the remaining questions.***
- vii) *If you encounter any typographical error, please read it as it appears in the text book.*
- viii) *Candidates are in their own interest advised to go through the General Instructions on the back side of the title page of the Answer Script for strict adherence.*
- ix) *No continuation sheets shall be provided to any candidate under any circumstances.*

- x) Candidates shall put a cross (X) on blank pages of answer Script.
- xi) No blank page be left in between answer to various questions.
- xii) No programmable Calculator is allowed.
- xiii) No stencil (with different markings) is allowed.
1. a) Describe the phenomenon of climate change and desertification. How are they affecting agricultural production in various regions of the world? What are the mitigation measure and government programs to tackle the situation in India? (40)
- b) Explain any five of the following (5 × 8 = 40)
- Bio fuels - Types and potential in India with examples.
 - What is Carbon foot print? Explain with an example.
 - Green manuring & Green leaf manuring and their significance in tropical farms.
 - Soil health indicators and their significance
 - C:N ratio and its significance
 - DRIS approach of fertilizer recommendation.
 - Criteria of essentiality of plant nutrients.
2. a) Differentiate between the following (Any Five) (5 × 5 = 25)
- Saline Soils v/s Alkaline Soils
 - Chemical farming v/s Organic farming

- iii) Micronutrients v/s Macro Nutrients
 - iv) Cereals v/s Millets
 - v) Desi Bengal gram v/s Kabuli Bengal gram
 - vi) Gypsum application v/s Lime Application
 - vii) Biochar V/s organic manures
- b) i) Soil is the living entity - Substantiate the statement and describe the management practices to maintain soil health (15)
- ii) Factors of soil formation: Discuss in detail. (15)
3. a) Give scientific reasons (any five) (5 × 5 = 25)
- i) It is difficult to meet the nutrient requirement of crops through organic sources.
 - ii) Minor millets are best crops under rain fed farming. -Explain with examples.
 - iii) Legumes need less of nitrogen and more of molybdenum for their nutrition.
 - iv) Gypsum application is the essential part of ground nut cultivation.
 - v) Fodder crops need more nitrogen and food crops should be applied with less nitrogen
 - vi) Surface sandy layer of soils is better in soil and water conservation.
 - vii) Soil health cards can reduce the cost of cultivation.

- b) i) What are the types of micro-irrigation systems and how advances in micro-irrigation technologies have brought better crop performance (15)
- ii) Describe Agri - Horti systems of crop cultivation with suitable examples. (15)
4. a) Explain any Five of the following (5 × 5 = 25)
- i) SRI method of rice cultivation and its advantages
- ii) Methods of Sugarcane planting in India with suitable examples.
- iii) Retting in Jute and desuckering in Tobacco.
- iv) Fatigue of Rice - Wheat system in India.
- v) Role of woman in Indian Agriculture.
- vi) Village knowledge centres and their importance in technology transfer
- vii) What is Soil pH? And it's significance for farming?
- b) i) Reasons for perpetual shortage of pulse and oil seeds in India and what are the programs undertaken by Government in India? (15)
- ii) Farmers suicides in India, reasons, implications and mitigative measures? (15)
5. a) Describe the principles of following agro technologies (any five) (5 × 5 = 25)
- i) Precision farming.
- ii) Composting of Agri - wastes.

- iii) Ground water recharging
 - iv) More crop per drop.
 - v) Frontline demonstrations.
 - vi) Seed Hardening
 - vii) Solarisation of seed beds.
- b) i) What are the reasons for migration of rural youth to urban centres and how to manage the problem? And what is ARYA (15)
- ii) Describe the concept of soil survey and land use planning (15)
6. a) Answer any five of the following (5 × 5 = 25)
- i) Diversified farming is ideal for rain fed situation in India.
 - ii) Advantages and Disadvantages of Eucalyptus cultivation.
 - iii) Advantages and Disadvantages of crop-holiday.
 - iv) Land suitability classification and it's significance
 - v) Method, need importance of puddling in Rice.
 - vi) STCR approach of fertilizer recommendation & its advantage over conventional method.
 - vii) Unutilized / Underutilized crops in India and their significance.

- b) i) Components and importance of "Agri-informatics"
How it can transform Indian Farming. (15)
- ii) How to increase the share of consumer's rupee for farmers? (15)
7. a) Answer any five of the following (5 × 5 = 25)
- i) Scientific principles of farm management.
- ii) New tools for agriculture extension.
- iii) LEISA technologies.
- iv) Farmer field schools method of agricultural extension
- v) Farmers Interest Groups (FIG) with successful examples.
- vi) IFS-models with suitable examples
- vii) Carbon sequestration and its need for the present day
- b) i) Non-Chemical methods of weed control (15)
- ii) What is acids soil? How to reclaim it? (15)

