

CSM : 17

AGRICULTURE

PAPER - I

Time Allowed : 3 hours

Full Marks : 100

Marks for each question is indicated against it.

Attempt any 5 (five) questions taking not more than 3 (three) questions from each Part.

PART - A

1. What do you understand by climate change? Discuss the global initiatives to reduce the impact of such changes and strategies advocated for resilient agriculture in light of climate change. **(5+15=20)**

2. Describe critical period of crop weed competition with suitable examples. What are the precautions to be considered while using herbicides? Describe in your own words an integrated weed management strategy suitable for hill farming. Calculate the requirement for commercial herbicide product for one hectare area if a herbicide with 80 percent *ai* (active ingredient) has to be applied at the rate of one kg *ai ha*⁻¹. **(3+4+8+5=20)**

3. Differentiate any four of the followings: **(4×5=20)**
 - (a) Dry farming and rainfed farming
 - (b) Cropping system and Cropping pattern
 - (c) Field capacity and water-holding capacity
 - (d) Selective and non-selective herbicides
 - (e) Non Government Organization (NGO) and self-help groups

4. What do you understand about the cooperative farming system? Briefly explain about the different types of cooperative farming system and its significance in Indian situation. **(20)**

PART - B

5. Differentiate **any four** of the followings: **(4×5=20)**
- (a) Agroforestry and Social forestry
 - (b) Alluvial soil and Black soil
 - (c) Saline soil and Alkali soil
 - (d) Nitrification and Ammonification
 - (e) Mineralization and Immobilization
6. What do you mean by rain water harvesting? What are the various types of rain water harvesting? Explain the scope and benefits associated with rain water harvesting especially in North Eastern hilly region of India. **(20)**
7. (a) What do you mean by Integrated Plant Nutrient Management (IPNM)? What are the components of integrated plant nutrient management? **(10)**
- (b) What do you understand by Problem Soils? Discuss the strategies to enhance productivity of crops under acid soils. **(10)**
8. Answer **any four** of the followings: **(4×5=20)**
- (a) Role of bio-fertilizers in improving soil productivity
 - (b) What are the various water conservation practices that can be used in rainfed agriculture?
 - (c) What do you mean by water use efficiency? What are the approaches to increase the water use efficiency in the crops?
 - (d) Discuss in brief the approaches to enhance the nitrogen use efficiency in rice
 - (e) Fertigation

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