

AGRICULTURE

Paper – I

Time Allowed : Three Hours

Maximum Marks : 200

Question Paper Specific Instructions

Please read each of the following instructions carefully before attempting questions :

*There are **EIGHT** questions in all, out of which **FIVE** are to be attempted.*

*Questions no. 1 and 5 are compulsory. Out of the remaining **SIX** questions, **THREE** are to be attempted selecting at least **ONE** question from each of the two Sections A and B.*

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

*Answers must be written in **ENGLISH** only.*

SECTION A

Q1. Answer the following in about 150 words each :

8×5=40

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| (a) | Describe the basis of classification of agro-ecological zones of India. Give the important characteristics of any two zones with their states/regions and major cropping patterns. | 8 |
| (b) | Differentiate between multi-storey cropping and relay cropping. Write their importance. | 8 |
| (c) | What is the physiological effect of low temperature on seed germination ? What are its remedies ? | 8 |
| (d) | Describe the integrated weed control measures involving both pre- and post-emergence herbicides in rice and cotton. | 8 |
| (e) | How can we manage erosion and run-off in valley land ? | 8 |

Q2. Write short notes on the following in about 200 words each : **10×4=40**

- (a) Bio-fertilizers and bio-herbicides and their benefits. 10
- (b) Biological nitrogen fixation bacteria and their modes of action. 10
- (c) Role of phosphorus solubilizing and/or mobilizing organisms in crop production. 10
- (d) Azolla, its production technology and role in rice culture. 10

Q3. Give the recommended package of practices for wheat, maize, pigeon-pea and potato under the following heads : **10×4=40**

- (a) Time of sowing/season
- (b) Spacing pattern
- (c) Seed rate
- (d) Nutrient management
- (e) Weed control

Q4. Explain the following in about 200 words each : **10×4=40**

- (a) Agro-forestry and its benefits. 10
- (b) Cloning technology for propagation of forest tree species. 10
- (c) Role of social forestry in the present situation of global warming. 10
- (d) Green house gases (GHG), their effects on crop production and possible remedial measures. 10

SECTION B

- Q5. Answer the following in about 150 words each : 8×5=40**
- (a) How is plant growth affected by water-logging conditions ? Suggest suitable measures to improve crop productivity under these situations. 8
 - (b) Explain run-off losses of irrigation water and their management. 8
 - (c) What are the various irrigation systems followed in crop production ? Describe the merits and demerits of the system you prefer the most. 8
 - (d) What measures are taken for increasing economic viability of farming ? 8
 - (e) What is crop diversification ? What are the factors affecting it ? 8
- Q6. Describe the following in about 200 words each : 10×4=40**
- (a) Important characteristics of dryland and rainfed farming. 10
 - (b) Constraints of pulse production in India and measures to improve their production and productivity. 10
 - (c) Polyhouse technology and its impact on farmers' prosperity. 10
 - (d) Stabilization of agricultural product prices. 10
- Q7. Answer the following in about 200 words each : 10×4=40**
- (a) What is the need of farm mechanization in the present situation ? 10
 - (b) Mention the benefits of advance planning in agriculture. 10
 - (c) What is the basis of classification of water for irrigation ? 10
 - (d) Write a short note on Lab-to-Land programme. 10
- Q8. Discuss the following in about 200 words each : 10×4=40**
- (a) Role of SAUs and NGOs in effective dissemination of agricultural technologies. 10
 - (b) Need for survey of extension programmes in agriculture and its method of survey. 10
 - (c) Role of APMC for the benefits of farming community. 10
 - (d) Important characteristics of sodic soils and their reclamation. 10

