

**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.

Question Nos. **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

1. (a) Elaborate the strategy for increasing production of vegetable oil in India. 8
- (b) State the differences between green manuring and brown manuring, and write the advantages of brown manuring. 8
- (c) Discuss the effects of abiotic stresses on agricultural production. 8
- (d) Give an account of merits and demerits of nanofertilizers with suitable examples. 8
- (e) Give an account of agricultural practices affecting sustainability of natural resources. 8
2. (a) Describe the good cultivation practices for short-term initial control of weeds in crops. 15
- (b) Give an elaborate account of agronomic practices for managing the problems of environmental pollution. 15
- (c) Explain the term 'crop diversification'. Discuss the contribution of high-yielding short-duration varieties in crop intensification and diversification in India. 10
3. (a) Write the characteristics and reclamation of saline soils and sodic soils. 15
- (b) Explain various concepts of agroforestry systems and discuss their roles in livelihood security in rural India. 15
- (c) Discuss the geographic factors used by the National Bureau of Soil Survey and Land Use Planning (NBSS & LUP) for agroecological zoning in India. 10
4. (a) Describe the cultivation of maize in respect of the following :
  - (i) Types of maize
  - (ii) Earthing up
  - (iii) Water management
  - (iv) Weed management
  - (v) Harvesting 15
- (b) Differentiate between intercropping and mixed cropping. Explain the terms 'additive series', 'replacement series' and 'land equivalent ratio' with examples. 15
- (c) Describe the role of biofertilizers in success of integrated nutrient management and nutrient availability in India. 10

## SECTION—B

5. (a) Describe the causes of soil erosion in brief. 8
- (b) What are the harmful effects of poor drainage on plants? 8
- (c) Enlist and briefly explain the competencies needed by an extension professional. 8
- (d) Why should a farmer maintain farm records? Enlist the records to be maintained by the farmer. 8
- (e) Enlist and explain in brief the problems associated with marketing of agricultural produce in India. 8
6. (a) Elaborate different *in situ* water conservation techniques by appropriate land configurations. 15
- (b) Enlist the purposes of extension evaluation and explain the degrees of extension evaluation. 15
- (c) Elaborate the institutional infrastructure available for agricultural marketing in India. 10
7. (a) Describe the role of Self-Help Group (SHG), Cooperative Society and Farmer Producer Company (FPC) in optimization of resource utilization by farming community. 15
- (b) What is commodity-based extension? Explain its characteristics and weaknesses. 15
- (c) Enlist and explain the approaches to increase water-use efficiency in crop fields. 10
8. (a) Describe the farm management decisions (organizational, administrative and marketing management decisions) to be made by the farmer as a manager of his farm business. 15
- (b) Differentiate between rainfed and dryland agriculture. Describe the technological approaches for improving crop productivity under dryland. 15
- (c) Describe the 'bottom-up approach' adopted under Technology Assessment and Refinement through Institution Village Linkage Programme. 10

★ ★ ★

