

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

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