

AGRICULTURE (Paper II)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

All questions carry equal marks.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Answer any three of the following in about 200 words each:
 - (a) Discuss the role of self-incompatibility in plant breeding.
 - (b) Briefly explain the salient features of cytoplasmic inheritance.
 - (c) Briefly describe hybrid seed production of bajra.
 - (d) Explain the role of vernalization in crop production.
2.
 - (a) Describe the method of back cross breeding used for transfer of recessive disease resistance. Can this method improve yield potential? Justify your answer.
 - (b) Describe the pure-line selection. How far has this method been useful in evolving high yielding varieties of cereal crops?
 - (c) Discuss the role of conservation and utilization of plant genetic resources giving examples.
3.
 - (a) Define plant growth regulators. Classify them according to their mode of action, and discuss their use in horticulture.
 - (b) Describe the role of photo-morphogenesis in plants and explain the influence of light on biomass accumulation in plants.
 - (c) Describe the temperature-induced injuries in fruits, vegetables and flower crops. Explain the strategies by which these injuries can be avoided.
4. Justify the following statements with the help of examples:
 - (a) Mutation creates variability needed for evolution.
 - (b) Improved crop varieties have contributed significantly to green revolution in India.
 - (c) Adoption of bio-technological techniques in horticulture are quite useful.
 - (d) Apical dominance has great significance in floriculture and landscape gardening.

SECTION 'B'

5. Answer any three of the following in about 200 words each, with examples:
 - (a) Discuss the relevance of pruning and training of horticultural crops.
 - (b) Explain the causes of guava wilt and describe its control measures.
 - (c) Discuss the use of herbicides in agriculture and the hazards from their use.
 - (d) Discuss the reasons for biennial bearing in fruits, and the measures for its alleviation.

6. (a) Describe the ecological classification of horticultural crops in the country. Discuss the climate requirements for litchi, pineapple and cherry, and name three commercial varieties of each of these fruits.
- (b) What is the scope for floriculture in India particularly for export purposes? Discuss the package of practices for the cultivation of roses.
- (c) Describe the factors responsible for post-harvest losses in fruits and vegetables and the measures to minimise these losses.
7. (a) What are the principles of integrated insect-pest management in agriculture? Describe the methods used for control of pests of citrus fruits.
- (b) Discuss the importance and scope of processing of fruits and vegetables. Briefly describe the methods of vegetables preservation with the help of suitable examples.
- (c) Differentiate between climacteric and non-climacteric fruits. Explain the changes that occur during maturity and ripening of these fruits.
8. Explain the following with examples:
- (a) Market intelligence and marketing of fruits and vegetables.
- (b) Principles of orchard planning.
- (c) Role of Apomixis in horticulture.
- (d) Use of fungicides for the control of diseases in vegetables crops.