

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.

The number of marks carried by a question/part is indicated against it.

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:

3×20=60

 - (a) Define micromutations. Briefly discuss the methods for their detection and applications in crop improvement.
 - (b) Differentiate mass selection from pure-line selection and also explain why pure-line selection has been widely used than mass selection.
 - (c) Classify different types of seed. How will you proceed for producing the certified seed of paddy?
 - (d) How does Agrobacterium and its plasmids play role in transformation of dicotyledonous plants? Whether can they be utilized in the transformation of any monocotyledonous plants?
2. Answer the following in about 200 words each:

3×20=60

 - (a) Describe the medicinal importance of Indian aloe (Aloe vera) along with its production technology.
 - (b) Discuss the importance of allopolyploids in evolution and crop improvements. Give suitable examples.
 - (c) Write the typical symptoms caused by 'litchi mite' in 'litchi'. Suggest its management practices.
3. Answer the following in about 200 words each:

3×20=60

 - (a) Discuss the use of multiline or composite varieties to control epidemic diseases of self pollinated crops.
 - (b) Describe the etiology, diagnostic symptoms, predisposing factors and management practices of blister blight of tea.
 - (c) Write about the problems and prospects of commercial floriculture in India.
4. Answer the following in about 200 words each:

3×20=60

 - (a) Differentiate Public Distribution System (PDS) from Targeted Public Distribution System (TPDS). How does TPDS help the population living below poverty line?
 - (b) Delineate the carbohydrate metabolism in crop plants.

- (c) Define epidemiology. Describe the forecasting models used for pests and diseases of major food crops in India.

SECTION 'B'

5. Answer any three of the following in about 200 words each: **3×20=60**
- (a) Explain the techniques used in production of distant hybrids. What are the problems in using improved varieties in distant hybridization?
 - (b) Define dichogamy. Describe in brief protogyny and protoandry.
 - (c) Describe the virus-vector relationship of leaf curl of tomato.
 - (d) Specify the prevention and control strategies of stored grain pests.
6. Answer the following in about 200 words each: **3×20=60**
- (a) Explain the concept of total post-harvest losses in mango. What methods can be used for enhancing shelf-life of the mango?
 - (b) Recommend a viable package of practices for commercial production of marigold.
 - (c) How do the root-knot nematode damage the crop plants? Suggest some measures to overcome the root-knot problem.
7. Differentiate the following in about 200 words each: **3×20=60**
- (a) Somatic hybridization versus protoplast fusion
 - (b) Cultural versus biological control of pests
 - (c) Formal versus informal seed supply systems
8. Write short notes on the following in about 150 words each: **4×15=60**
- (a) Molecular basis of disease diagnosis
 - (b) Antifeedant
 - (c) Precision farming
 - (d) Ug 99 and wheat cultivation