

AGRICULTURE

Paper II

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. Answer the following in about 150 words each : 8×5=40
- 1.(a) Describe the mode of origin and growth of cell wall. 8
- 1.(b) Define allopolyploidy. Give its applications in crop improvement. 8
- 1.(c) Write the factors affecting seed quality. 8
- 1.(d) Enlist the enzymes requiring metal activators. 8
- 1.(e) Describe chemically induced male sterility. 8
2. Answer the following :
- 2.(a) Distinguish between epistasis and dominance. Explain gene interaction. 15
- 2.(b) Amongst the seed samples of a particular crop which would you recommend to grower based on the following data ? 10

Samples	Germination(%)	Purity(%)
A	85	98
B	88	97
C	91	96

- 2.(c) Discuss the cyclic and non-cyclic photophosphorylation. 15

3. Distinguish between the following :
- 3.(a) Diffusion and osmosis. 15
- 3.(b) Sex-influenced and sex-limited characters. 10
- 3.(c) Synchrony in flowering and planting ratio of parents. 15
4. Answer the following :
- 4.(a) What is phytochrome ? Enlist different processes mediated by phytochrome. 15
- 4.(b) Give the advantages of molecular markers over other genetic markers. 10
- 4.(c) Describe the seed certification and seed quality assurance in India. 15

SECTION 'B'

5. Answer the following in about 150 words each : 8×5=40
- 5.(a) Importance of pinching in quality production of carnation. 8
- 5.(b) Preventive and curative methods against stored grain pests. 8
- 5.(c) Integrated management of *Fusarium* and *Verticillium*. 8
- 5.(d) Entomopathogenic bacteria for pest control. 8
- 5.(e) Describe the preservation methods of important fruits. 8
6. Answer the following :
- 6.(a) Give major insect pests of cauliflower and their management. 15
- 6.(b) Find out the quantity of Chlorpyrifos 20EC for treating an area which requires 1000 litres of spray fluid at 0.02% strength. 10
- 6.(c) Discuss the procurement and processing constraints of food grains. 15
7. Distinguish between the following :
- 7.(a) Olericulture and pomology. 10
- 7.(b) Mildews and blights. 15
- 7.(c) Inoculative and augmentative releases of natural enemies. 15
8. Answer the following :
- 8.(a) What are the critical components need adequate attention while planning an orchard ? 15
- 8.(b) Discuss Protein-Energy-Malnutrition. 10
- 8.(c) Discuss various methods of training in chrysanthemum. 15