

AGRICULTURE**Paper II****0000385****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 chronological 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) Differentiate between IAA and IBA. Give their role in Agriculture. 8
1. (b) Describe testing, release and notification of crop varieties. 8
1. (c) Describe meristem culture and production of virus-free plants. 8
1. (d) Describe the role of micro and macromutations in crop improvement. 8
1. (e) Give the importance of 'economic threshold' and 'economic injury level' in integrated pest management. 8
2. Distinguish between the following : 10×4=40
2. (a) Gametogenesis and sporogenesis. 10
2. (b) Photoperiodism and vernalization. 10
2. (c) Isolation and Roguing in seed plots. 10
2. (d) Interspecific and intergeneric hybrids. 10
3. Answer the following : 10×4=40
3. (a) Enlist various types of male sterility. Describe briefly about cytoplasmic male sterility. 10
3. (b) Discuss engineering plants for tolerance to insect damage. 10
3. (c) Discuss food grain procurement and distribution constraints in India. 10
3. (d) What are vascular wilts ? Give main pathogens associated with this disease. 10

4. Answer the following :

10×4=40

- 4. (a) Give the differences between outer and inner mitochondrial membrane. 10
- 4. (b) Explain crassulacean acid metabolism. How they are better suited to extreme desiccation ? 10
- 4. (c) Enlist the factors affecting enzyme activity and give the importance of hydrogen-ion concentration. 10
- 4. (d) What is abscisic acid ? Give physiological roles of ABA. 10

SECTION 'B'

5. Answer the following in about 150 words each :

8×5=40

- 5. (a) Give the factors affecting post harvest life of flowers. 8
- 5. (b) Discuss drying, dehydration and concentration in preservation of fruits and vegetables. 8
- 5. (c) Give the major insect pests of tomato and their management. 8
- 5. (d) What are rapid methods of testing seed viability ? 8
- 5. (e) Why *Sitophilus oryzae* and *Rhyzopertha dominica* are important ? 8

6. Answer the following :

10×4=40

- 6. (a) What is disease occurrence and epidemic ? List different components of integrated disease management. 10
- 6. (b) Give definition and concept of biological control. How the biological control of *Agrobacterium tumefaciens* has been achieved ? 10

6. (c) What are the possible reasons for slow adoption of integrated pest management ? 10
6. (d) Give important varieties of aonla and discuss their harvesting and post harvest management. 10
7. Distinguish between the following : 10×4=40
7. (a) Back cross and Test cross. 10
7. (b) Rhizobial inoculant and Microbial toxin. 10
7. (c) Surface treatment and Fumigation. 10
7. (d) Germination and Dormancy. 10
8. Write short notes on the following : 10×4=40
8. (a) Design and layout of lawns and gardens. 10
8. (b) Food production and national dietary pattern. 10
8. (c) National and international food policies. 10
8. (d) Management of storage pests in pulses. 10
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