

Sl. N

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D-GT-M-BHB

AGRICULTURE

Paper II

Time Allowed : Three Hours

Maximum Marks : 200

INSTRUCTIONS

Candidates should attempt questions 1 and 5 which are compulsory and any THREE of the remaining questions selecting at least ONE question from each Section.

Marks carried by each part of a question are indicated against each.

Answers must be written in ENGLISH only.

Neat sketches may be drawn, wherever required.

Important Note : All parts/sub-parts of a question must be attempted contiguously. That is, candidates must finish attempting all the parts/sub-parts of each question they are answering in the answer-book before moving on to the next question.

Pages left blank must be clearly struck out. Answers that follow any pages left blank may not be given credit.

(Contd.)

Section – A

1. Attempt the following in about 150 words each :

4×10=40

- (a) Explain the differences between agrobacterium mediated gene transfer and 'gene gun' methods. Give example of crop where both methods have been used.
- (b) Give characteristics of 'caulimovirus' group along with suitable examples.
- (c) Explain the factors responsible for retarding the fruit ripening.
- (d) How ions effect the activity of enzymes ?

2. Answer the following in about 150 words each :

4×10=40

- (a) How fruits and vegetables help in adding nutritive value to human food ?
- (b) What are the requirements of seed certification for production of quality seed ?
- (c) Explain the modern practices to identify promising inbred lines for production of commercial hybrids.
- (d) Explain the concepts of economic threshold and economic injury level in integrated pest management.

3. Answer the following in about 150 words each :

4×10=40

- (a) Briefly discuss the points which must be considered while selecting for isolation of land in rice seed production.

- (b) Explain the advantages of marker assisted breeding over conventional plant breeding. Also give differences in their methodologies.
 - (c) Explain wilting coefficient and physiological dryness in crop plants.
 - (d) Describe the significance of inoculative releases and augmentation of natural enemies.
4. Distinguish between the following in about **150** words each : **4×10=40**
- (a) Scarification and stratification
 - (b) Conjugation mapping and recombination mapping
 - (c) Fruit fly and white fly
 - (d) Deflocculating agents and emulsifying agents

Section – B

5. Answer the following in about **150** words each : **4×10=40**
- (a) Why planting system is important for the orchard operations ? Explain Quincunx system.
 - (b) What is integrated disease management ? Give management of early and late blight of potato.
 - (c) Explain the genetic consequences of different modes of reproduction and their relevance in plant breeding.
 - (d) Explain the effect of water stress on leaf expansion and rate of photosynthesis.

6. Differentiate between the following in about 150 words each : $4 \times 10 = 40$

- (a) Oxidative phosphorylation and photophosphorylation
- (b) Baculovirus and entomopathogenic bacteria
- (c) Surface feeder and germ feeder
- (d) Neonicotinoids and triazines

7. Write short notes on the following, with specific examples, in about 150 words each : $4 \times 10 = 40$

- (a) Testing, release and notification of crop varieties
- (b) Vertifolia effect
- (c) Distant hybridization in crop improvement
- (d) Conservation of plant genetic resources

8. Attempt the following in about 150 words each : $4 \times 10 = 40$

- (a) Describe the cowpea production technology with reference to varieties, sowing time, seed rate, manuring and fertilization and plant protection methods.
- (b) What are the major constraints of pulse production in India ?
- (c) Describe opportunities and challenges in food processing industry in the country.
- (d) Enumerate the differences between Japanese and Mughal gardens.