

Agriculture

Paper-II

Time Allowed: Three Hours

Maximum Marks: 300

- Note:* 1. The figures in the margin indicate full marks for the questions.
2. Candidate should answer questions No. 1 and 5 which are compulsory and any **three** of the remaining questions, selecting at least **one** from each section.

SECTION – A

1. Write notes on any **five** of the following in not more than **120** words each:
- 12×5=60
- (a) Prepare a well labelled diagram of typical plant cell
 - (b) Difference between plant and animal cell
 - (c) Explain seed dormancy
 - (d) Structure of nucleic acid
 - (e) Variety in terms of plant breeding
 - (f) Different kind of seeds in seed production channel
 - (g) Explain mutation
2. Explain structural and numerical changes in chromosomes along with importance of each. 60
3. Explain heterosis and combining ability. How these are helpful to plant breeders? 60
4. Role of public and private sectors in seed production, processing and marketing in India. 60

SECTION – B

5. Write notes on any **five** of the following in not more than **120** words each:

12×5=60

- (a) Discuss the three different criteria of variation in the C4 cycle
- (b) Discuss the mechanism of cellular respiration in plants along with energy status of respiration?
- (c) Enlist the major insect pests of stored produce. Suggest suitable methods of management including prophylactic and remedial measures
- (d) Why fruits and vegetables are known as protective food?
- (e) Name any five flowering annuals along with their scientific name, colour of flower and season of growing
- (f) Describe the cultivation of pineapple under following heads:
 - Soil and climate
 - Varieties
 - Planting density
 - Insect-pest and diseases
- (g) Discuss the trend in production after green revolution in terms of cereals, pulses and oilseeds in India.

6. What are the criteria for considering any chemical as plant growth regulator? Discuss in detail the biosynthesis and mechanism of action for Auxin.

60

7. Describe the crop-wise major insect pests and diseases of principle vegetables and suggest suitable integrated pest management measures.

60

8. Discuss ten major constraints in procurement and distribution of food grains under Public Distribution System.

60