

AGRICULTURE (Paper II)

Time Allowed : Three Hours

Maximum Marks : 250

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.

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.

SECTION 'A'

1. Answer the following questions in about 150 words each:

10×5=50

 - (a) Classify the mutation. Explain the application of mutation breeding.
 - (b) Write the package and practices of Gladiolus cultivars citing method of propagation, soil, climatic conditions, harvesting and yield.
 - (c) What are Enzymes? Write the properties and factors affecting enzyme's activity.
 - (d) Explain the constraints in procurement and distribution policies in India.
 - (e) What do you mean by C₃, C₄ and CAM mechanisms?
2. Answer each of the following questions:

12½×4=50

 - (a) Discuss the impact of rapid increase in population on food and agriculture.
 - (b) Write the diagnostic symptoms of Blister Blight of Tea. Explain the causal organism and management of the disease in tea plantation.
 - (c) What is meant by linkage and crossover? Write their significance in recombination breeding.
 - (d) What do you mean by genetically modified crop plants? Write its advantages and disadvantages.
3. Answer each of the following questions:

12½×4=50

 - (a) Define cole crops. Explain on what basis cole crops are grouped.
 - (b) Explain the law of homologous series. How is it helpful in genetic resources, conservation and utilization?
 - (c) What do you mean by nutrient deficiency? Explain the micro-nutrient deficiency in context of work capacity of women and children.
 - (d) What is stress physiology? Write the physiology of seed germination and development.
4. Answer each of the following questions:

12½×4=50

- (a) What is photoperiodism? Write at least one example of shortday plant, longday plant and day neutral plant.
- (b) Write the distribution of mango malformation in India. What are the causes of different malformations? Suggest to combat the malformation.
- (c) Write the essential nutrients required by plants for growth and development. Explain the boron deficiency symptom in Cauliflower and Litchi.
- (d) What are the components of DNA and RNA? Give the characteristic difference of the DNA and RNA.

SECTION 'B'

5. Answer the following questions in about 150 words each:

10×5=50

- (a) What are objectives of seed testing? Write the testing procedure adopted in paddy and wheat crops.
- (b) Name three important stored grain pests of Rice. Describe the biology and management of any one of them.
- (c) Define Quarantine. Explain the plant quarantine regulation with respect to wart disease of Potato and bunchy top disease of Banana.
- (d) What do you mean by Targeted Public Distribution System (TPDS)? Who are specially focussed group covered under this programme?
- (e) Write the importance of pruning and Training in fruit crops. Describe the procedure adopted in Grapes.

6. Answer each of the following questions:

12½×4=50

- (a) What are the reasons for food grain surplus in India? Write the steps taken by the government to save the food grains.
- (b) Write the package and practices of Potato cultivation under the heads of soil and climatic condition, seed rate, nutrients requirement, time of planting, earthing and yield.
- (c) Define respiration and state why is this process essential for plants.
- (d) Discuss the importance of conservation of plant genetic resources for crop improvements.

7. Answer each of the following questions:

12½×4=50

- (a) What are fungicides? How fungicides are classified on the basis of chemical nature?
- (b) Name the process by which carbohydrates are synthesized in plants. Narrate its mechanism.
- (c) Write the production technology of Marigold as it is one of the important flowers cultivated throughout the year.
- (d) What is cell? Explain the structure and function of the cell.

8. Write notes on each of the following:

12½×4=50

- (a) Predator and parasites
- (b) Laws of heredity
- (c) Biological control of pests and diseases
- (d) Food production and consumption trends in India