

AGRICULTURE (Paper II)

Time Allowed : Three Hours

Maximum Marks : 300

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.

All questions carry equal marks.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Answer any three of the following in about 200 words each:
 - (a) What is seed certification? Give a critical account of procedures of seed certification and how the genetic purity of seed is maintained.
 - (b) Briefly discuss the importance of male sterility in the improvement of crop plants.
 - (c) Discuss the relative photosynthetic efficiency of C-3 and C-4 plants.
 - (d) Critically discuss sex-linked, sex-limited and sex-influenced characters.
2.
 - (a) What are post-harvest losses? How can such losses can be minimised in India?
 - (b) What do you understand by “buffer stock”? What are the facilities for storage of grains in India?
 - (c) What is the centre [?] of origin of maize and cotton? Describe the methodology for production of hybrids seeds in each.
3.
 - (a) What is the practical value of apical dominance?
 - (b) What is the place of origin, translocation, effect on plant growth and mode of disintegration of natural auxins in plants?
 - (c) What do you understand from vertical and horizontal resistance? Give suitable examples on their utilisation in various crops.
4. Write short notes on:
 - (a) Idiotype
 - (b) Vernalisation
 - (c) Senescence
 - (d) Diallele cross
 - (e) GATT agreement
 - (f) Feeding habits of insects

SECTION 'B'

5. Answer any three of the following in about 200 words on each:
 - (a) Mention the food production and consumption trends in India. Support your answer with figures and tables.

- (b) What is balanced diet? Give, in tabular form, the caloric requirements of various groups of persons depending on age and load of work.
 - (c) Define botanical pesticides. Give examples of their successful use in integrated pest and disease management.
 - (d) How do plant mycoplasmas differ from bacteria and viruses? How was mycoplasmal etiology proved in India? Mention the principles of control of mycoplasmal disease.
6. (a) Explain in brief: (i) What will be the effect of excessive use of fertilizers on the soil? (ii) What will be the effect of excessive irrigation on the production of crop?
- (b) Enumerate the causes of low productivity in Indian agriculture. How can the agricultural productivity be improved by new technologies?
- (c) Critically discuss with suitable examples seed-borne pathogens and their controls.
7. (a) What is the origin of mango, grape and tomato? Mention the names of their cultivated varieties and packages of practices including plant protection measures; also mention their yield per hectare.
- (b) What do you understand from organic farming?
- (c) Suggest the vegetables to be grown in kitchen gardens located in Trivandrum, Jaipur and Shimla. Give reasons for your choice.
8. Write explanatory notes on any six of the following:
- (a) Global warming
 - (b) Synthetic pyrethroids
 - (c) Root-stocks
 - (d) Plant quarantine
 - (e) Black arm of cotton
 - (f) Rice Tungro
 - (g) Cross protection
 - (h) Water economy