

AGRICULTURE
Paper—II

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 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.

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

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| Q. 1 Answer the following :— | 8×5=40 |
| Q. 1(a) Describe endocytic and secretory pathways in Eukaryotic cells. | 8 |
| Q. 1(b) Describe totipotency and give its application. | 8 |
| Q. 1(c) Describe gene for gene relationship between host and pathogen. | 8 |
| Q. 1(d) Give major characteristics of CAM plants. | 8 |
| Q. 1(e) How drying proceeds in the seed ? | 8 |
| Q. 2 Distinguish between the following :— | 10×4=40 |
| Q. 2(a) Back cross and dihybrid cross. | 10 |
| Q. 2(b) Lampbrush chromosomes and B-chromosomes. | 10 |
| Q. 2(c) Isolation distance and roguing in seed plots. | 10 |
| Q. 2(d) Auxins and gibberellins. | 10 |

- Q. 3 Answer the following :— 10×4=40
- Q. 3(a) What is the role of micro and macro mutations in crop improvement ? 10
- Q. 3(b) Differentiate between cyclic and non-cyclic electron transport of photosynthesis. 10
- Q. 3(c) Describe meristem culture and production of virus-free plants. 10
- Q. 3(d) Enumerate formal and informal seed supply systems in India. 10
- Q. 4 Answer the following :— 10×4=40
- Q. 4(a) What are sex influenced and sex linked traits ? Explain why they differ. 10
- Q. 4(b) Describe in brief various schemes suggested to improve characteristics of inbred lines. 10
- Q. 4(c) How is a crop variety/hybrid released in India ? Give different types of seed. 10
- Q. 4(d) How growth can be distinguished from development and indicate the role of ethylene in plants. 10

SECTION—B

- Q. 5 Answer the following :— 8×5=40
- Q. 5(a) What are the various treatments suggested to improve seed germination ? 8
- Q. 5(b) Describe the various methods to enhance as well as to delay ripening of fruits. 8
- Q. 5(c) Importance of economic thresholds in integrated pest management. 8
- Q. 5(d) Nutritive value of Indian foods. 8
- Q. 5(e) What methods are used to control stored pests ? 8
- Q. 6 Answer the following :— 10×4=40
- Q. 6(a) Discuss the seed borne diseases of cole crops and their control. 10
- Q. 6(b) What is the mechanism of vernalization ? Give its significance in agriculture. 10
- Q. 6(c) What are the major constraints in food production and processing ? 10
- Q. 6(d) Botanicals as alternative to chemical seed treatment. 10
- Q. 7 Differentiate the following :— 10×4=40
- Q. 7(a) Layout plans for gardens and lawns. 10
- Q. 7(b) American bollworm and pink bollworm. 10
- Q. 7(c) Khapra beetle and rust red flour beetle. 10
- Q. 7(d) Protective foods and energy foods. 10
- Q. 8 Write short notes on the following :— 10×4=40
- Q. 8(a) Integrated pest management in seed potato. 10
- Q. 8(b) Package and practices for the marigold and aster flower crop. 10
- Q. 8(c) What are organisms that affect the seed quality in storage ? 10
- Q. 8(d) National dietary pattern. 10