

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

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