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MSCBOT-507

Cytogenetic and Plant Breeding

M.Sc. Botany (MSCBOT)

2nd Semester Examination, 2023 (June)

Time : 2 Hours] **Max. Marks : 70**

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A
(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Describe organization of eukaryotic gene and gene structure.

2. Write a detailed note on the achievements of plant breeding.

3. Describe different methods of fusion of protoplast for production of somatic hybrids.

4. Discuss about mitochondrial and chloroplast DNA. Why its inheritance does not follow Mendelian pattern?

5. What is repetitive DNA? Explain various types of repetitive DNA and DNA packaging.

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. Describe briefly various types of genetic variation.

2. Differentiate between mass selection and pure line selection.

3. What do you mean by mutation breeding and what is its significance?

4. How the performance of double cross hybrid is predicted?

5. How apomictic seeds are produced?

6. What is additive gene action? Describe its important features and role in plant breeding.

7. Discuss the role of chloroplast and mitochondria in the cytoplasmic inheritance.

8. Discuss briefly various source of male sterility in crop plant.