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MSCBOT-507

Cytogenetic and Plant Breeding

M.Sc. Botany (MSCBOT)

2nd Semester Examination, 2022 (Dec.)

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.

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. What are genetic parameters? How would you utilize the information obtained on gene action in plant breeding?

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

3. What are the different methods of crop improvement and when and where they used in particular crop?

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

5. What is sex linked inheritance and explain different types of sex linked diseases. A hemophiliac woman has a mother who is phenotypically normal. What are the genotypes of her parents?

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. Explain different components ojgenetic variation.

2. Compare three types of epistatic gene actions.

3. Write a brief note on the achievements on plant breeding.

4. Define the merits and demerits of mass selection.

5. What are the basic differences between self-incompatibility and male sterility?

6. What are the basic differences between recurrent and non-recurrent apomixes?

7. Describe gene action in relation to genetic material and mode of pollination.

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