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**ST—194—2022**

**FACULTY OF SCIENCE**

**M.Sc. (Second Semester) EXAMINATION**

**MAY/JUNE, 2022**

**(New/CBCS Pattern)**

**BOTANY**

**Paper-VII**

**(Cell Biology, Genetics and Plant Breeding)**

**(Friday, 1-7-2022)**

**Time : 2.00 p.m. to 5.45 p.m.**

*Time— 3.45 Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt all questions.*

*(ii) All questions carry equal marks.*

*(iii) Draw well labelled diagrams wherever necessary.*

1. Describe in detail ultrastructure and functions of chloroplast and mitochondria. 15

*Or*

Describe in detail process of Mitosis in plants and add a note on its significance. 15

2. Describe in detail complementary and duplicate gene interactions with suitable examples. 15

*Or*

Write down characters of multiple alleles, Explain it with reference to ABO Blood group and Rh-factor in man. 15

3. Describe in detail factors affecting Hardy-Weinberg law. 15

*Or*

Describe in detail Extra chromosomal Inheritance with reference to episomes, mitochondria and chloroplast. 15

P.T.O.

4. What is Mutation ? Describe in detail types of mutation, and a note on physical and chemical mutagens. 15

*Or*

What is male sterility ? Describe types, mechanism and applications of male sterility.

5. Write short notes on (any *three*) : 15
- (a) Ultrastructure and functions of Golgi apparatus
  - (b) Types of Linkage
  - (c) Chromosomal Abbreptions
  - (d) Cross pollination in Plants.