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NY—139—2023

FACULTY OF SCIENCE AND TECHNOLOGY

M.Sc. (First Year) (Second Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(CBCS/New Pattern)

BOTANY

Paper VII

(Cell Biology, Genetics and Plant Breeding)

(Friday, 8-12-2023)

Time : 10.00 a.m. to 1.00 p.m.

Time—Three Hours

Maximum Marks—75

N.B. :- (i) Attempt *all* questions.

(ii) *All* questions are compulsory and carry equal marks.

(iii) Draw neat and well labelled diagrams wherever necessary.

1. What are the types of cell signaling ? Add a note on cell receptors. 15

Or

Define meiosis ? Describe the process of meiosis-I.

2. What is Crossing Over ? Add a note on its types and significance. 15

Or

What is epistatic gene interaction ? Explain complementary gene interaction

(9 : 7) with suitable example.

P.T.O.

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(2)

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3. Describe in detail the structural chromosomal aberration and note its types. 15

Or

What is extra chromosomal inheritance ? Explain how mitochondrial and chloroplast DNA are inherited.

4. Explain self-incompatibility and add a note on its significance in plant breeding. 15

Or

What is hybridisation ? Explain steps involved in hybridisation and add a note on its significance.

5. Write short notes on (any *three*) : 15

- (a) Structure and functions of vacuole
- (b) Rh-factor
- (c) C-value paradox
- (d) Role of mutations in plant breeding.

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