

A-0033

Total Pages : 3

Roll No.

MBOT-601

M.Sc. BOTANY (MSCBOT)

(Cell Biology and Genetics)

3rd Semester Examination, Session December 2024

Time : 2:00 Hrs.

Max. Marks : 35

Note :- This paper is of Thirty Five (35) 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 answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.***

Section-A

(Long Answer Type Questions) $2 \times 9\frac{1}{2} = 19$

Note :- Section 'A' contains Five (05) Long-answer type questions of Nine and Half ($9\frac{1}{2}$) marks each. Learners are required to answer any two (02) questions only.

- Q. 1. Write about the ultrastructure of chloroplast with a well-labeled diagram and describe its functions.
- Q. 2. Give an illustrated account of Meiosis and explain its significance in plants.
- Q. 3. Discuss in detail how DNA proved to be the genetic material.
- Q. 4. Why is the plasma membrane called a selectively permeable membrane ? Describe various types of transport that occur across the plasma membrane.
- Q. 5. What are chromosomal aberrations ? Discuss numerical aberrations in detail.

Section–B

(Short Answer Type Questions) 4×4=16

Note :- Section ‘B’ contains Eight (08) Short-answer type questions of Four (04) marks each. Learners are required to answer any *four* (04) questions only.

- Q. 1. What is the nucleosome concept ?
- Q. 2. Why is Mendel’s First Law of Genetics called the Law of Segregation ?
- Q. 3. Differentiate between paracentric and pericentric inversion.

- Q. 4. Describe the general properties of genetic code.
- Q. 5. Discuss the mechanism of apoptosis.
- Q. 6. What is electron microscopy, and how does it differ from light microscopy ?
- Q. 7. How do insertions and deletions lead to frameshift mutations, and what is their potential impact ?
- Q. 8. Discuss how the primary cell wall differs from the secondary cell wall.
