

**S-51**

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# **MSCBOT-506**

## **Cell Biology of Plants**

M.Sc. Botany (MSCBOT)-20

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. Describe the structure and function of chromosome.

2. Draw a well labelled diagram of ultrastructure of plant cell and discuss about three cell organelles.
3. Describe structure of mitochondria and write its function in the cell.
4. Write down explanatory note on any *two* of the following :
  - (a) Cell cycle checkpoints.
  - (b) Cell senescence.
  - (c) Interphase of cell cycle.
5. Explain the role of calcium calmodulin in plant cell signaling with suitable diagram.

## **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. Justify the statement "Chloroplast is a semiautonomous organelle."
2. Explain the term genome, karyotype and idiogram.

3. Write short note on any *two* :
    - (a) Function of Golgi bodies.
    - (b) Cytokinesis.
    - (c) Interphase of cell cycle.
  
  4. Describe the structure and function of cell wall.
  
  5. Which cell division is reductional division and why ?
  
  6. Discuss the structure and functions of the Endoplasmic reticulum.
  
  7. Differentiate between any *two* of the following :
    - (a) Prokaryotic and Eukaryotic cells.
    - (b) Centromere and telomere.
    - (c) Heterochromatin and euchromatin.
  
  8. Give an account of structure and biogenesis of ribosomes.
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