

A-036

Total Pages : 3

Roll No.

MSCBOT-506

M.Sc. BOTANY (MSCBOT)

(Cell Biology of Plants)

2nd Semester Examination, 2024 (June)

Time : 2:00 Hrs.

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. *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) 2×19=38

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.

A-036/MSCBOT-506 (1)

P.T.O.

1. Draw a well labelled diagram of a typical plant cell as seen through an electron microscope. Describe the structure and functions of specific structures of plant cell only.
2. What is cell wall ? Describe the chemical composition, structure, origin and functions of the plant cell wall.
3. Describe structure of chloroplast with suitable diagram. Explain similarities and differences between mitochondria and chloroplast.
4. Write down explanatory note on any *two* of the following :
 - (a) Cell cycle checkpoints
 - (b) Functions of Endoplasmic reticulum
 - (c) Special types of Chromosomes
5. Describe ultrastructure of nucleus with suitable diagram. Discuss functions of different components of nucleus.

Section–B

(Short Answer Type Questions) 4×8=32

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.

1. Give a short account of symbiotic origin of mitochondria and chloroplast.
2. Explain function and biogenesis of Golgi body.
3. Describe the role of microtubules in chromosome movement during mitosis and meiosis.
4. What is meant by 70S and 80S ribosomes. In eukaryotic cell, which type of ribosome occur.
5. Write short note on any *two* of the following :
 - (a) Peroxisome
 - (b) Synaptonemal complex
 - (c) Lysosomal enzyme
6. Define the term centromere, telomere, nucleosome and autosome.
7. Differentiate between any *two* of the following :
 - (a) Phagocytosis and pinocytosis
 - (b) Passive transport and active transport
 - (c) Mitosis and meiosis
8. What is the role of calcium calmodulin cascade in signal transduction of plants ?
