

*Or*

Explain the regulation of RNA editing in chloroplast.

**Unit-III**

- 3.** What do you understand by Apoptosis ?

Describe its mechanism in detail.

*Or*

Describe the structure of Nucleus and explain nucleosome organisation also.

**Unit-IV**

- 4.** Give an account on Golgi apparatus and its functions.

*Or*

What do you understand by term cytoskeleton ?  
What are its components ? Explain the structure of microtubule and its roll in chromosome movements.

**G-1/155/22**

Roll No. ....

**I Semester Examination, January 2022****M.Sc.****BOTANY**

Paper I

(Cytology)

Time : 3 Hours ]

[ Max. Marks : 80

**Note :** All questions are compulsory. Question Paper comprises of 3 Sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.

**SECTION A****1×8=8****(Objective Type/Multiple Type Questions)***State true or false :*

1.  $\text{Na}^+$   $\text{K}^+$  ATPase export  $2\text{Na}^+$  ions out side the cell and import of  $3\text{K}^+$  ions in side the cell.
2. The cell wall is mainly composed of hemicellulose and lignin.
3. Oxidative phosphorylation is the most important function of mitochondria.

[ 2 ]

4. Photosynthetic carbon reduction cycle is called dark reaction.
5. BCl<sub>2</sub> protein is a true inhibitor of cell death.
6. Prokaryotic ribosome contains 16S rRNA.
7. Lysosome is also known as suicidal bag of the cell.
8. Cilia and Flagella have a characteristic arrangement of 7 + 2 microtubule.

**SECTION B**

**6×4=24**

**(Short Answer Type Questions)**

**Note :** Answer the following questions in 250 words.

**Unit-I**

1. Write note on ultrastructure and functions of cell wall.

*Or*

What is meant by a “Lipid Bilayer” ? Describe the fluid masonic model.

**Unit-II**

2. Write note on vacuole.

*Or*

What is Thyllakoid ? Describe molecular organisation of thyllakoid.

[ 3 ]

**Unit-III**

3. Write note on Retinoblastoma and E<sub>2</sub>F protein.

*Or*

Describe the ultrastructure of Ribosome.

**Unit-IV**

4. Explain the structure and function of Lysosome.

*Or*

Write note on confocal microscopy.

**SECTION C**

**12×4=48**

**(Long Answer Type Questions)**

**Note :** Answer the following questions in 500 words.

**Unit-I**

1. What are the specialized cells found in plants ? Describe any three types of specialised cells with suitable diagrams.

*Or*

Describe the chemical composition and mode of transport of plasma membrane.

**Unit-II**

2. Describe the structure and biogenesis of Mitochondria.