

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2023  
(Third Semester)

Branch – BOTANY

CELL AND TISSUE BIOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Plants cells are always in ----- shape.  
(i) Rectangular (ii) Square  
(iii) Round (iv) None of the above
- 2 PLP model for plasma membrane is known -----  
(i) Mosaic model (ii) Sandwich model  
(iii) Unit Membrane Model (iv) None of the above
- 3 Smooth Endoplasmic Reticulum produces -----  
(i) Carbohydrate (ii) Nucleic acid  
(iii) Lipid (iv) Protein
- 4 Synthesis of Ribosomes in prokaryotes occurs in  
(i) Nucleus (ii) Nucleoplasm  
(iii) Nucleolus (iv) Cytosol
- 5 In angiosperms, xylem is made up of  
(i) All of the above (ii) Tracheids and vessels  
(iii) Vessels and fibres (iv) All of the above

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Bring out the factors affecting imbibitions  
OR  
b Show the chemical nature of lignins.
- 7 a Outline the function of mitochondria.  
OR  
b How many plastids are available in plants?
- 8 a Explain the structure of vacuole.  
OR  
b How many microtubules are present in a single plant cell?

Cont...

- 9 a Compare the cytoplasm and nucleoplasm.  
OR  
b State the functions of nucleic acids in cell.
- 10 a Describe the features of parenchyma.  
OR  
b Outline the seasonal activity of Cambium.

**SECTION -C (30 Marks)**

Answer **ALL** questions  
**ALL** questions carry **EQUAL** Marks (5 x 6 = 30)

- 11 a Discover cell wall cross structure with its functions.  
OR  
b Discuss about the plasmolysis process with its different stages.
- 12 a Summarize the concept of Fluid mosaic model with reference to plasma membrane.  
OR  
b Examine the ultra structure and functions of plant chloroplast.
- 13 a Analyze the Golgi complex in plant and animal system with its functions.  
OR  
b Highlight the ribosome in living organisms.
- 14 a Point out the structure of nucleolus in eukaryotic cell and differentiate with nucleus.  
OR  
b Discuss about the structure of nuclear membrane with its parts.
- 15 a Identify the following of phloem.  
1. Origin and development    2. Types    3. Functions  
OR  
b Enumerate the general properties of sclerids.

Z-Z-Z

END