

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BSc DEGREE EXAMINATION MAY 2025**  
(First Semester)  
Branch - **BIOTECHNOLOGY**

**CELL BIOLOGY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1.	What is cell biology? a) Study of cell division only b) Study of cancerous cell c) Study of cell structure and function d) Study of metaphase of a cell	K1	CO1
2.	The passage of water across a selectively permeable membrane is known as a) Osmosis b) Diffusion c) Facilitated diffusion d) None of the above	K1	CO1
3.	_____ is the process by which cells interact and attach to neighboring cells through specialized molecules of the cell surface. a) Cell Migration                      b) Cell Division c) Cell Development                d) Cell adhesion	K1	CO2
4.	Which type of macromolecules make up the wall of microtubules? a) Globular proteins                b) Glycoproteins c) Deoxyribonucleic acids        d) Carbohydrates	K1	CO2
5.	The site of aerobic respiration in eukaryotic cells is _____ a) Peroxisome                      b) Plastid c) Mitochondria                    d) Cilia	K1	CO3
6.	If you want to count the number of chromosomes, which is the best stage to do so? a) Telophase                      b) Interphase c) Prophase                        d) Metaphase	K1	CO3
7.	The first step in protein targeting is _____ a) Synthesis of protein b) Translocation to Golgi body c) Translocation to nucleus d) Translocation to ER	K1	CO4
8.	Which of the following is NOT a true statement regarding exocytosis? a) It forms intracellular vesicles from inward folding of the plasma membrane. b) It requires fusion of vesicles with the plasma membrane. c) It secretes large molecules out of the cell. d) It is responsible for removing large waste particles that cannot be recycled by the cell.	K1	CO4
9.	Which of these is the most eventful period of the cell cycle? a) G1 phase                        b) G2 phase c) S phase                         d) M phase	K1	CO5
10.	Which of the following signal molecules is not used for extracellular signaling? a) Autocrine b) Endocrine c) Cyclic AMP d) None of the above	K1	CO5

Cont...

**SECTION - B (35 Marks)**  
**Answer ALL questions**  
**ALL questions carry EQUAL Marks**

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Explain Sodium Potassium Pump	K2	CO1
	(OR)		
11.b.	How is cytosolic pH maintained?		
12.a.	Give account on Glycosaminoglycan Chains	K2	CO2
	(OR)		
12.b.	Write about cell junctions		
13.a.	Explain Electron Transport Chain	K2	CO3
	(OR)		
13.b.	Differentiate between Mitosis and Meiosis		
14.a.	Explain protein modifications in the RER	K3	CO4
	(OR)		
14.b.-	Write notes on exocytosis		
15.a.	Explain role of hormones and growth factor for in cell transformation	K4	CO5
	(OR)		
15.b.	Explain cAMP		

**SECTION -C (30 Marks)**  
**Answer ANY THREE questions**  
**ALL questions carry EQUAL Marks**

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Describe the Structure of membrane proteins	K3	CO1
17	Briefly explain extracellular matrix compounds a)Hyaluronic acid b) Proteoglycans	K3	CO2
18	Give detail notes on Photosynthesis Process	K4	CO3
19	Briefly explain organelle biogenesis and protein secretion	K4	CO4
20	Describe cell cycle and components of control system	K3	CO5

Z-Z-Z

END