22BCU101N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(First Semester)

Branch - **BIOCHEMISTRY**

SUBCELLULAR BIOCHEMISTRY

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Sphingosine based lipids are known to be predominantly present in the membrane of a. endothelial cell b. epithelial cell c. muscle cell d. nerve cell	K1	CO1
	2	Anionic polymers found in cell wall of gram-positive bacteria is a. xylan b. cellulose c. teichoic acid d. cutin	K2	CO1
2	3	Which of the following can pass through cell membrane by simple diffusion? a. monosaccharide b. starch c. glycerol d. aminoacid	K1	CO2
	4	One among the following ion pump transports small molecules in addition to ions. P class pumps b. V class pumps c. F class pumps d. ABC superfamily	K2	CO2
3	5	___ is an ATPase required for ciliary movement. a. nexin b. dynein c. tubulin A d. tubulin B	K1	CO3
	6	Bioluminescence is a phenomenon attributed to a. perioxisomes b. glyoxisomes c. lysosomes d. ribosomes	K2	CO3
4	7	___disappears during cell division and reappears after completion of cell division. a. nucleolus b. nucleoplasm c. nucleic acid d. nuclear material	K1	CO4
	8	Cisternae at the convex end of dictyosome is also known as_____face. a. trans/maturing b. cis/maturing c. cis/forming d. trans/forming	K2	CO4
5	9	Identify the protein having less tensile strength and more elasticity. a. collagen b. elastin c. fibronectin d. integrin	K1	CO5
	10	Communicating junctions are also known as __ junctions. a. tight b. gap c. occluding d. anchoring	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	List the functions of the animal cell membrane.	K1	CO1
		(OR)		
	11.b.	What are the important differences between a prokaryotic and eukaryotic cell.		
2	12.a.	What is the role of sodium sodium-potassium pump?	K1	CO2
		(OR)		
	12.b.	How are molecules transported by facilitated diffusion?		
3	13.a.	List the important functions of peroxisomes.	K1	CO3
		(OR)		
	13.b.	Recall the functions of lysosomes.		
4	14.a.	Explain the structural organization of Golgi bodies.	K2	CO4
		(OR)		
	14.b.	Interpret the important functions of the nucleus.		
5	15.a.	Compare the functions of tight junction and gap junction.	K2	CO5
		(OR)		
	15.b.	Illustrate the structure of collagen.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions
ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Show the ultrastructure of the cell membrane with a neat diagram.	K1	CO1
2	17	List the sequence of events in phagocytosis with a diagram.	K1	CO2
3	18	Recall the ultrastructure of cilia & flagella with a diagram.	K1	CO3
4	19	Illustrate the structure and function of the mitochondria.	K2	CO4
5	20	Summarize the structure and function of collagen with a neat diagram.	K2	CO5

Z-Z-Z END