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22BCU101N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 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	The cell wall of plant is ____ to all substances a) Permeable b) Impermeable c) Semipermeable d) Selectively permeable	K1	CO1
	2	The defined structure makes the difference in prokaryotic and Eukaryotic organisms a) Mitochondria b) Nucleus c) Golgi d) Vacuole	K2	CO1
2	3	In kidney in what way glucose and sodium ions are transported? a) Antiport b) Passive c) Symport d) None	K1	CO2
	4	The process of ingesting fluids from nearby area in a cell is called as a) Surrounding b) Engulfing c) Phagocytosis d) Pinocytosis	K2	CO2
3	5	The role of peroxisomes in detoxification of a) H_2O_2 b) O_2 c) CO_2 d) N_2	K1	CO3
	6	___ helps in locomotion and sensory functions in our body a) Hands b) Legs c) Cilia d) Flagella	K2	CO3
4	7	Which can act as the power house of the cell? a) Nucleus b) Mitochondria c) Peroxisome d) Lysosome	K1	CO4
	8	Which carries the genetic material and transfers in each generation? a) Nucleus b) Nucleus membrane c) Lysozyme d) Lysosome	K2	CO4
5	9	____are adhesive protein molecules that maintains mechanical integrity of tissues a) Integrin b) Elastin c) Collagen d) desmosomes	K1	CO5
	10	Find the character of collagen a) Hormone b) Protein c) Lipid d) Aminoacid	K2	CO5

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.	Recall the functions of cell wall.	K1	CO1
		(OR)		
	11.b.	Tell about the structure of bacterial cell and explain it with a neat diagram.		
2	12.a.	How osmolarity maintains by sodium-potassium pump?	K1	CO2
		(OR)		
	12.b.	Discuss about the ping pong mechanis		

Cont...

3	13.a.	Enlist the structure and functions of peroxisomes.	K2	CO3
		(OR)		
	13.b.	Find the role of actin in retain the shape and structure of a cell.		
4	14.a.	How Endoplasmic reticulum plays its role in transport, folding and steroid synthesis?	K2	CO4
		(OR)		
	14.b.	Stepwise explain about the ATP synthesis in power house.		
5	15.a.	Write about the importance of cell adhesion molecules.	K2	CO5
		(OR)		
	15.b.	Insist the importance of Integrin in transport of molecules.		

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	With reference to nuclear membrane differentiate between eukaryotic and prokaryotic cell.	K2	CO1
2	17	Illustrate on facilitated diffusion with an example.	K2	CO2
3	18	Elaborate on the importance of lysosomes in digestive function of worn-out cells.	K2	CO3
4	19	Perform ATP synthesis using Mitochondria and report.	K2	CO4
5	20	Imply the role of gap and tight junctions in molecule transport.	K2	CO5

Z-Z-Z END