

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - BIOCHEMISTRY

CELLULAR 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	Where are peripheral proteins attached? a) The surface of the cell membrane b) The surface of the mitochondria c) The surface of the nucleus d) The surface of the ribosomes	K1	CO1
	2	Which among the following acts as receptors for bacteriophage attachment in Gram- negative bacteria? a) Cilia b) O antigens c) Lipid A d) Teichoic acid	K2	CO1
2	3	Which out of the following has the highest redox potential? a) NAD b) FMN c) O ₂ d) FAD	K2	CO2
	4	Where does oxidative phosphorylation take place? a) Ribosomes b) Nucleus c) Cell membrane d) Mitochondria	K1	CO2
3	5	Which of the following signal molecules is not used for extracellular signaling? (a) Cyclic AMP (b) Endocrine (c) Autocrine (d) None of the above	K2	CO3
	6	CREB stands for ----- a) cGMP response element binding protein b) cAMP response element binding c) cATP response element binding protein d) cADP response element binding protein	K1	CO3
4	7	Cyclins are important cell regulators that cannot do their job unless they are bound to ----- a) tumor suppressors b) cyclin-dependent kinases c) oncogenes d)phosphate groups	K2	CO4
	8	Cancer cells depend on _____ metabolic pathway. a) Effectors b) Primary messengers c) Secondary messengers d) G-proteins	K1	CO4
5	9	Which microorganism was first identified of inducing tumours in animals? a) Virus b) Bacteria c) Fungi d) Algae	K1	CO5
	10	Proto-oncogenes can be transformed to oncogenes by all of the following mechanisms except _____ a) During a viral infection cycle b) Elimination of their start signals for translation c) Chromosomal rearrangements d) Chemically induced mutagenesis	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.	Paraphrase on Receptor Mediated Endocytosis.	K3	CO1
	(OR)			
	11.b.	State the mechanism behind Lactose permease in E.Coli.		
2	12.a.	Prove Standard Reaction Potential that take place in the live cell.	K4	CO2
	(OR)			
	12.b.	Discuss on Glycerol phosphate Shuttle.		
3	13.a.	List out the Functions of Cell Surface Receptors.	K4	CO3
	(OR)			
	13.b.	Define CRED and brief on Neurodegenerative Disorder.		
4	14.a.	Recall the Biochemical Studies carried out with Oocytes and eggs.	K3	CO4
	(OR)			
	14.b.	Comment on Loss of Celcycle Control and Cancer.		
5	15.a.	How are Cells transformed in Culture.	K4	CO5
	(OR)			
	15.b.	Brief on Oncogenes and their role in cancer cells.	K3	

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	Do Active Transport Mechanism takes place in our cells? If yes support your point with ONE suitable example.	K3	CO1
2	17	Elaborate on the Machinery of ATP formation and Chemiosmotic Mechanism.	K3	CO2
3	18	Notes on i) G protein Coupled receptors ii) Importance of Ras protein.	K4	CO3
4	19	Narrate on Apoptosis and Sketch the Apoptotic Pathway.	K4	CO4
5	20	How is Cancer Diagnosed at the Molecular Level? Elaborate on it.	K3	CO5

Z-Z-Z END