

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)

Branch - BIOTECHNOLOGY

CELL AND MOLECULAR BIOLOGY

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	Which among the following does not belong to active transport? a) Simple diffusion b) Ion Pumps c) Exocytosis d) Endocytosis	K1	CO1
	2	Peroxisomes are found in _____. a) Mitochondria b) Cytoplasm c)Nucleus d)Nucleoplasm	K2	CO1
2	3	Introns are _____. a) coding sequences b) Non Coding sequences c)Repetitive sequences d)Regulatory Sequences	K1	CO2
	4	Adenine +Ribose sugar is _____. a) Adenine b)D-adenosine c)Adenosine d)AMP	K2	CO2
3	5	Termination of replication is triggered by _____. a)DNA polymerase b)Helicase c)Tus protein d)Gyrase	K1	CO3
	6	Which among this is an example of site specific recombination? a)Modification b)Transposition c)Holiday Junction d) Retro transposons	K2	CO3
4	7	AUG is a _____. a)Start codon b)stop codon c)Degenerate codon d)None of the above	K1	CO4
	8	Which energy rich molecule is required for initiation of translation? a)ATP b) GTP c) CTP d) UTP	K2	CO4
5	9	'i' gene in lac operon refers to _____. a)inducer b) Inhibitor c) regulator d)transcriptor	K1	CO5
	10	A section of DNA that is wrapped around a core a protein _____. a)Nucleus b)Nucleotide c)Nucleoside d)Nucleosome	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.	Explain the types of cell junctions with diagram.	K2	CO1
		(OR)		
	11.b.	State how protein folding occurs inside the cells.		
2	12.a.	Demonstrate the Watson and Crick model of DNA.	K3	CO2
		(OR)		
	12.b.	Explain the genome organisation of mitochondrial DNA.		
3	13.a.	List the methods used in DNA repair mechanism.	K3	CO3
		(OR)		
	13.b.	Enumerate the types of Recombination in prokaryote and eukaryotes.		
4	14.a.	Elaborate the mechanism of transcription in prokaryotes.	K3	CO4
		(OR)		
	14.b.	Enlist the features of Genetic code and build the codons for aminoacids.		
5	15.a.	Enlist diseases associated with defects in regulation of gene.	K4	CO5
		(OR)		
	15.b.	Give an outline of post translational modifications in protein.		

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	Discuss how transport occurs across cell membrane?	K2	CO1
2	17	Enlist the features and properties of 3 types of DNA.	K3	CO2
3	18	Explain replication of DNA with diagram.	K3	CO3
4	19	Elaborate the steps in translation of proteins.	K3	CO4
5	20	Explain about mechanisms of gene alteration.	K4	CO5

Z-Z-Z

END