QP Code: R251G020 | Reg. No | | | | | | | | | | | AY 24

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, ODISHA, GUNUPUR

(GIET UNIVERSITY)

M. Sc. (First Semester - Regular) Examinations, February – 2025

24MLSPC11004 – Molecular Biology and Instrumental Techniques

(Life Science)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** the questions		
a.	Draw the structure of histone association with DNA.	CO1	K2
b.	Differentiate between monocistronic and polycistronic mRNA.	CO1	K2
c.	How the stability of m-RNA can be maintained?	CO2	K2
d.	Define Beer's and Lambert' law.	CO3	K1
e.	Differentiate between mobile phase and stationary phase.	CO4	K2

PART – B **(10 x 5 = 50 Marks)**

		Marks	CO #	Blooms Level
	Answer ***ALL*** the questions			
2.a.	Discuss with diagram of Griffith experiment and its conclusion.	5	CO1	K2
b.	Discuss with diagram of Hershey and Chase experiment and its conclusion.	5	CO1	K2
	(OR)			
c.	Discuss the initiation event of replication in prokaryotes with proper diagram.	5	CO2	K2
d.	Explain the Cot curve analysis with diagram.	5	CO1	K1
3.a.	Discuss the genome organization of eukaryotes.	5	CO1	K2
b.	Define C-Value? Discuss C-Value paradox with suitable diagram.	5	CO1	K1
	(OR)			
c.	Explain the process of nucleotide excision repair with diagram.	5	CO2	K2
d.	Explain the mechanism of initiation of transcription in prokaryotes.	5	CO2	K3
4.a.	Discuss the process of mismatch repair with suitable diagram.	5	CO2	K2
b.	Diagrammatically explain process of Polyadenylation.	5	CO2	K3
	(OR)			
c.	Illustrate in details about the role of snRNPs during splicing mechanism with suitable diagram.	5	CO2	K3
d.	Write down the process of RNA editing with examples.	5	CO3	K1
5.a.	What is Spectroscopy? Explain the principle and instrumentation of UV-Visible Spectrophotometry.	10	CO4	K1
	(OR)			
b.	Explain in details about the principle and instrumentation of Phase contrast microscopy.	10	CO4	K1
6.a.	What is Chromatography? Explain the principle and instrumentation of HPLC.	10	CO4	K1
	(OR)			
b.	Explain the principle and instrumentation of Gas chromatography.	10	CO4	K1

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