Name. _____	**Printed Pages:01**
Student Admn. No.: _____	

School of Biomedical Sciences

Summer Term Examination – July - August 2024

[Programme: M.Sc. Medical Biotechnology] [Semester: I] [Batch: 22-23]

Course Title: Molecular and Genetic Engineering	**Max Marks: 100**
Course Code: MBAMBT2002	**Time: 3 Hrs.**

Instructions:

1. *All questions are compulsory.*
2. *Assume missing data suitably, if any.*

		K Level	COs	Marks
	SECTION-A (15 Marks) 5 Marks each			
1.	Explain the importance of Gyrase in replication of DNA.	K2	CO2	5
2.	Discuss the structural composition of RNA polymerase II of eukaryotes.	K2	CO3	5
3.	List advantages and disadvantages of south-western blot.	K2	CO6	5
	SECTION-B (40 Marks) 10 Marks each			
4.	Enlist the states in which an interphase chromatin exists. Explain the mechanism of condensation of chromatin.	K4	CO1	10
5.	List the different kinds of DNA helicases found in the eukaryotic cells emphasizing the importance of each of them.	K3	CO2	10
6.	Determine the meaning and importance of signal hypothesis.	K4	CO4	10
7.	Draw a diagram showing a typical YAC. Indicate the key features and explain how a YAC is used to clone DNA.	K4	CO5	10
	SECTION-C (45 Marks) 15 Marks each			
8.	Determine the mechanism of following post-translational modifications: a.) Glycosylation b.) Ubiquitination c.) Phosphorylation d.) N-Acetylation e.) S-Nitrosylation	K5	CO4	15
9.	Compile the process of transcription in Prokaryotes.	K5	CO3	15
10	Distinguish between: A. South-western blot and southern blot B. Far-western blot and western blot C. Southern blot and Western blot	K5	CO6	15