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

School of Biological Life Sciences
Summer Term Examination – July - August 2024

[Programme: M.Sc. Microbiology] [Semester: II) [Batch:]

Course Title: BIOTECHNOLOGY AND GENETIC ENGINEERING **Course Code: MSDB5008**	**Max Marks: 100** **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.	What is the basic introduction to animal and plant biotechnology?			5
2.	Write down application of Animal tissue culture used in biotechnology.			5
3.	Discuss the importance of germplasm conservation in plant biotechnology.			5
	SECTION-B (40 Marks) 10 Marks each			
4.	Discuss the process of constructing genomic libraries.			10
5.	Explain the methods used for the isolation, purification, quantification, and storage of nucleic acids.			10
6.	Describe the process of gene therapy and its methods in the treatment of diseases.			10
7.	Discuss the role of PCR and hybridization methods in plant genetic engineering.			10
	SECTION-C (45 Marks) 15 Marks each			
8.	Discuss the different types of vectors, including viral vectors, used in plant genetic engineering and their benefits.			15
9.	Describe the process of genetic engineering in plants, including the use of restriction enzymes and transformation of plant cells.			15
10	Discuss the challenges and ethical considerations associated with gene therapy and stem cell research.			15