Reg. No ..... Name **26P223**

M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2026

SEMESTER 2 : BOTANY

COURSE : **24P2BOTT06 : MOLECULAR BIOLOGY AND IMMUNOLOGY**

(For Regular 2025 Admission and Improvement/Supplementary 2024 Admission)

Time : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	How would the deletion of the following sequences or features most likely affect a eukaryotic pre-mRNA? a) AAUAAA sequence b) 5' Cap c) Poly(A) tail	(R)
2.	What do you mean by catabolite repression?	(R)
3.	What is si RNA?	(E)
4.	Analyze the peculiarities of hammerhead ribozymes.	(An)
5.	What are the roles of SSBs and Clamp loader in DNA replication?	(U)
6.	Differentiate between Innate immunity and acquired immunity.	(An)
7.	Name a vaccine used for COVID-19 vaccination.	(R)
8.	Explain the role of ATP in the activity of ligase enzyme.	(U)
9.	Define hybridoma.	(U)
10.	Differentiate mini and macro satellites?	(An)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	Briefly explain the peculiarity of T- cell receptors in antigen recognition.	(U)
12.	Justify one gene one polypeptide hypothesis.	(E)
13.	Illustrate the structure with an emphasis on the roles of various parts of a polymerase.	(An)
14.	Give an account of processing of pre-rRNA.	(R)
15.	Briefly explain RNA Polymerase II promoters.	(U)
16.	How does alternative splicing regulate gene expression in eukaryotes?	()
17.	Explain uni- and bi- directional replication with their significances.	(An)
18.	Describe the structure of right handed helixed alternative forms of DNA. Write a comparative account of these alternative forms.	(An)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Explain the process of prokaryotic translation.	(A)
20.	Briefly explain the process of translation in eukaryotes.	(U)
21.	Give a detailed account on DNA repair mechanism.	(U)
22.	'Immune system is a surveillance system'. Discuss the mechanism by which it protect our body from external intruders.	(E)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;