

M. Sc DEGREE END SEMESTER EXAMINATION - JULY 2021**SEMESTER 2 : BOTANY****COURSE : 16P2BOT06 : MOLECULAR BIOLOGY AND IMMUNOLOGY***(For Regular - 2020 Admission and Supplementary 2019/2018/2017/2016 Admissions)*

Time : Three Hours

Max. Marks: 75

PART A**Answer any 8 (2 marks each)**

1. Write a brief account on ribozymes.
2. Explain H-DNA.
3. Write a brief account on RNA tertiary structures.
4. Give an account on IS elements.
5. What is meant by replicative transposons?
6. Give an account on various types of sigma factors and their functions.
7. Give an account on RNA polymerase I.
8. Explain the process of translation termination in eukaryotes.
9. What is miRNA?
10. What do you mean by lytic cascade?
11. What is the role of macrophages in antigen processing?
12. What are the major Antigen Presenting Cells (APC) in immune system?

(2 x 8 = 16)**PART B****Answer any 7 (5 marks each)**

13. What are the genetic consequences of the mechanism of homologous recombination?
14. Briefly explain SOS response mechanism.
15. Explain nonhomologous end joining.
16. Justify one gene one polypeptide hypothesis.
17. Give an account on RNA polymerase II along with its structure.
18. Give an account on protein modifications occurring in ER.
19. Explain the genetic control of lytic growth in λ phage.
20. Write a short note on cells involved in cellular immunity.
21. Discuss the generation and advantages of monoclonal antibodies?
22. What is a vaccine? How it is developed?

(5 x 7 = 35)**PART C****Answer any 2 (12 marks each)**

23. Explain and compare the structure of replication origin in prokaryotes and eukaryotes.
OR
24. Explain the process of splicing mediated by spliceosome. Give an account on type I and type II introns.
25. Briefly explain the process of transcription in prokaryotes.
OR
26. Write an essay on antibody diversity and its clinical importance.

(12 x 2 = 24)