

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2023****(Regular/Improvement/Supplementary)****ZOOLOGY****GZOL5B07T: BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY****Time: 2 ½ Hours****Maximum Marks: 80****SECTION A: Answer the following questions. Each carries *two* marks.****(Ceiling 25 Marks)**

1. Comment on green biotechnology.
2. What is a cosmid?
3. Comment on MALT.
4. Differentiate between sterilisation and disinfection.
5. Comment on Fumigation as a method for controlling microbial growth.
6. Write notes on interferons.
7. Explain the causative agent, symptoms, and mode of transmission of gonorrhoea.
8. What are prions?
9. Name any two viral diseases transmitted by vectors and their causative agents.
10. What are bioinsecticides?
11. Discuss the agents through which passive immunization is obtained.
12. What are Complementarity Determining Regions?
13. Comment on multigene organization of immunoglobulin light chain.
14. What are the methods for disaggregating cells for primary cell culture?
15. Define window period.

**SECTION B: Answer the following questions. Each carries *five* marks.****(Ceiling 35 Marks)**

16. Briefly explain plasmid vectors.
17. What are viruses? Detail out their classification based on structure.
18. Briefly explain the method for isolation of pure microbial culture from a mixed microbial population.
19. Give an account on various selection methods for transformed cells.
20. Briefly discuss bacterial growth curve.
21. Write notes on any two sexually transmitted bacterial diseases.
22. What are Antigen Presenting Cells? Detail out various Professional APCs.
23. Briefly discuss any two primary immunodeficiency diseases.

**(PTO)**

**SECTION C: Answer any *two* questions. Each carries *ten* marks.**

24. Write an essay on autoimmune diseases and its different types with examples.
25. What are the industrial applications of Biotechnology? Explain with suitable examples.
26. Write an essay on Major histocompatibility complex. Mention different classes and arrangement of genes
27. Explain about the transgenic organism. Describe the ethical issues associated with transgene technology and human cloning.

**(2 x 10 = 20 Marks)**