

**Ph.D Course Work Examinations, July-2023**

**MICROBIOLOGY**

**Course-IV: Recent Advances in Microbiology**

**Time: 3 Hours**

**Max. Marks: 70**

**Instructions: all sections are compulsory**

**SECTION-A**

**I. Write Short Notes on any Five of the Following Questions in about One and Half  
Page Each (5×5=25)**

1. Antiviral agents
2. Recombinant vaccines
3. Biosensor and its applications
4. Detection of food borne pathogens
5. Production and purification of Enzymes
6. Antibiotic policy-CLSI and WHO guidelines
7. Phage therapy

**SECTION-B**

**II. Answer any Three of the Following Questions in about Three Pages Each (3×10=30)**

8. Write a note on Bioremediation of the polluted spheres
9. Explain briefly on bacterial taxonomy
10. Write a note on Quorum sensing
11. Elaborate on types of microbial interactions in the environment
12. Write a note on vectors involved in genetic engineering

**SECTION-C**

**III. Answer any One of the Following Question in about Four Pages Each (1× 15=15)**

13. Explain in detail the Preservation of microbial cultures
14. Explain in detail the Applications of Nano-Materials in Biosystems

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