

**M.Sc. 3rd Semester Examination, 2023**

**MICROBIOLOGY**

*( Environmental Microbiology )*

PAPER – MCB-304 (CBCS)

*Full Marks : 50*

*Time : 2 hours*

Answer **all** questions

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in  
their own words as far as practicable*

**Unit – MCB-304.1**

Answer any **two** questions from the following :

2 × 2

1. What is sewage ?

2. Define bioremediation.
3. What is BOD ?
4. What do you mean by hypoxia ?

Answer any two questions from the following :

5. State the mechanism and consequence of biomagnification. 4 × 2  
2 + 2
6. What is eutrophication ? Why eutrophication takes place ? In which sense an eutrophic pond water is differed from normal (non-eutrophic) pond water ? 1 + 2 + 1
7. Write down the advantage and disadvantages of bioventing. 2 + 2
8. What is anaerobic digestion ? State its significance. 2 + 2

Answer any **one** question from the following :

9. What is secondary treatment of wastewater ?  
Explain tricking filter method of removal of organic matter from wastewater. What is activated sludge ? 8 × 1  
2 + 4 + 2
10. Give example of microorganisms which degrades pesticides and petrolium hydrocarbons. What are the risks associated with PCB as a Xenobiotic ? How Benzene is being converted to succinate and pyruvic acid explain with diagram. 2 + 1 + 5

### Unit – MCB-304.2

Answer any **two** questions from the following :

- 2 × 2
11. What is Carrier-based and liquid bio-fertilizers ?
12. Biofertilizer acts as a boon of soil –explain.

13. What are sexual transmitted diseases ?

14. Write the impact of biofertilizer.

Answer any **two** questions from the following :

4 × 2

15. How insect could transmitted different diseases ? What are nosocomial diseases ?

2 + 2

16. Write the basic mechanisms of plant-growth promotion by various PGPF.

4

17. How airborne microbes can be controlled ?

4

18. What do you mean by portal of entry ? Write a short note on biofuel.

2 + 2

Answer any **one** question from the following :

8 × 1

19. What is Biopesticides ? Classify the biopesticides and give example each type, write the mechanism of virus as a biopesticide.

1 + 5 + 2

20. How HIV could transmitted ? Describe the processing of Covaxin and Covishield as COVID-19-preventive measure. 2 + 6

**[ Internal Assessment — 10 Marks ]**

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