Register Number:

Date:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU-27

M.Sc. MICROBIOLOGY – II SEMESTER

SEMESTER EXAMINATION: APRIL 2022

(Examination conducted in July 2022)

MBDE 8621: ENVIRONMENTAL MICROBIOLOGY

Time- 2 ½ hrs **Max Marks-70**

This paper contains **2** printed pages and **4** parts

I. Answer any Five of the following: 5 x 3 =15

1. How do expiratory droplets dissipate in air?
2. What is the impact of acid rain on trees?
3. Write two or three sentences on unculturable bacteria.
4. Explain the use of sterols to identify water contamination.
5. What is phytostablilization?
6. Stating an example give the importance of coagulants in water treatment.
7. Briefly explain what are bioplastics.

II. Answer any Five of the following: 5 x 5 =25

8. Write briefly on pollen calendar and its importance. Add a note on identification of pollen.
9. Stating examples illustrate different types of microbial interactions in brief.
10. Give an account of waterborne diseases caused by bacterial infectious agents.
11. Write a note on biodeterioration of paper and textiles and highlight the causative agents.
12. Explain the importance of studying microbial evolution and describe any one experiment that you have studied.
13. Elaborate on different industrial bioleaching techniques.
14. List the ill effects of marine oil spills and give strategies for its remediation.

III. Answer any Two of the following: 2 X 10 =20

15. A. Write a brief note on Measles.
    B. Draw a neat and labelled diagram of zonation in marine habitat.

16. Describe the composition of waste waters of Petrochemical industry and discuss its treatment in detail. Compare and contrast these waters with domestic sewage.
17. Write notes on incineration as a method for solid waste management.

IV. Answer of the following: 1 x 10 =10

18. An environmental testing lab based in Bengaluru is working on a project which includes analysis of water quality from different reservoirs from across the country.

    A. One team has to analyze the pesticide content of these waters. What would be the most convenient and effective way of going about it? Explain and justify your answer. (7)

    B. Microbial load of the waters have to be assessed. Describe a method for the same. (3)