

SEMESTER EXAMINATION-2021
CLASS - ... ENVIRONMENTAL MICROBIOLOGY
PAPER CODE: MMB-C104 ENVIRONMENTAL
MICROBIOLOGY

Time: 3 hour

Max. Marks: 70

Min. Pass: 40%

Note: Question Paper is divided into two sections: **A** and **B**. Attempt both the sections as per given instructions.

SECTION-A (SHORT ANSWER TYPE QUESTIONS)

Instructions: Answer any five questions in about 150 words each. Each question carries six marks. (5 X 6 = 30 Marks)

Question-1: What do you know about phylloplane? Discuss in brief the phyllosphere microflora of any plant.

Question-2: Write short notes on:

- a. Bioaerosol
 - b. Droplet nuclei

Question-3: Discuss the role of microorganisms in environmental microbiology.

Question-4: Briefly explain about the detection methods of microbes found in air.

Question-5: Write short notes on:

- a. Physico-chemical characteristics of soil.
 - b. Molecular markers for ecological study of soil microorganisms.

Question-6: Give an account of different parameters for microbial analysis of water purity.

Question-7: Write in brief the effects of mycorrhizal fungi on their hosts.

Question-8: What are septic tanks and oxidation ponds. What is their significance?

Question-9: What are root exudates? Also describe the composition of root exudates and factors affecting exudation.

Question-10: Give an account on fresh water ecosystem and marine water ecosystem.

SECTION-B (LONG ANSWER TYPE QUESTIONS)

Instructions: Answer any FOUR questions in detail. Each question carries 10 marks. (4 X 10 = 40 Marks)

Question-11: How many types of microorganisms live in soil? Describe in brief about the different factors affecting them.

Question-12: What do you understand by microbial interactions. Explain the

antagonism, parasitism and predation with in the microbial communities of rhizosphere.

Question-13: Give a detailed account of physical, chemical and microbiological characteristics of sewage.

Question-14: Write the primary, secondary and tertiary treatment processes used in wastewater treatment?

Question-15: What do you understand by bioremediation? Explain In- situ and Ex- situ bioremediation with their merits and limitations.

Question-16: Write note on interaction between microorganisms and contaminated soil. Explain the relationship with reference of syntrophism and co-metabolism.

Question-17: Write short notes on:

- a. Degradation of hydrocarbon.
- b. Bioaugmentation.

Question-18: What is mycorrhizae? Explain different types of mycorrhizae. How do plants associate with more than one type of mycorrhizae?

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