

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

M. Tech./Ph.D. I Semester (Biotechnology)

COURSE CODE (CREDITS): 18M1WBT134 (03)

MAX. MARKS: 15

COURSE NAME: Microbial Ecology

COURSE INSTRUCTORS: Ashok Kumar Nadda

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Section I

Q 1 Very short answer type questions

- a) What are the meaning of ecological niche and ecological community? How do these differ from each other? (Mark 1)
- b) What are the Epilimnion and Hypolimnion layers in aquatic ecosystem? Explain the difference between them? (Mark 1)
- c) How does the methanogen differ from methylotrophs? Give their examples and ecological habitat. (Mark 1)
- d) What is Eutrophication? Give examples. What are the oligotrophic and Eutrophic waters (Mark 1)
- e) Give the example of various microscopic techniques used to study the microbes in nature? (Mark 1)

Section II

Q 2 What are the lentic environments? How can we classify the lentic environment on the basis of light penetration? (2.5 marks)

Q 3 Which ecological region is known as benthic zone? Write the major characteristics of inhabitants of benthic zone. (2.5 marks)

Section III

Q 4 What is the importance of sulfur cycle in ecosystem? Give examples of microbes involved sulfur cycle. (2.5 marks)

Q 5 Give a detailed description of various steps involved in biofilm development. Explain diagrammatically. How does the biofilm differ from microbial mats (Mark 2.5)