

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

M.Sc.–3rd Semester (Microbiology)

COURSE CODE (CREDITS): 21MS1MB311 (3)

MAX. MARKS: 15

COURSE NAME: ENVIRONMENTAL MICROBIOLOGY

COURSE INSTRUCTORS: AKN

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

Q.No	Question	CO	Marks
Section I			
Q1	a) What is nitrification, and which bacteria carry it out?		1
	b) What role do methanogens play in the carbon cycle?		1
Section II			
Q 2	Which aquatic zone has the highest biodiversity? Name the different zones of a pond ecosystem on the basis of light penetration.		2
Q 3	What is a chemostat? Name one advantage of chemostat culture over batch culture.		2
Q 4	Why are the microbes considered as key drivers of nutrient cycling? Name two microbes involved in sulphur cycling.		2
	Which molecule helps bacteria stick together in a biofilm? Discuss the various steps in the biofilm formation.		2
Section III			
Q 5	Name two main microbial groups found in microbial mats. What is the ecological importance of microbial mats?		2.5
Q 6	Differentiate between in-situ and ex-situ bioremediation. What is the role of microbes in bioremediation? Name one microorganism commonly used in bioremediation.		2.5
	Total		15