

Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

First Semester

Environmental Engineering

PEVT2402 – Environmental Microbiology

Regulations - 2024

Duration : 3 Hrs

Maximum : 100 Marks

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Name two waterborne pathogens and the diseases they cause.	L1	1	2
2.	Differentiate between prokaryotic and eukaryotic cell structure.	L2	1	2
3.	List two examples of microorganisms found in marine environments.	L1	2	2
4.	Mention the role of microorganisms in the nitrogen cycle.	L2	2	2
5.	List the different growth phases of microorganisms.	L1	3	2
6.	Why is the electron transport system important in microorganisms?	L2	3	2
7.	Define nitrification and denitrification.	L1	4	2
8.	Name any two indicator organisms used in water quality testing.	L2	4	2
9.	What is the difference between toxicant and toxin?	L2	5	2
10.	Name two commonly used test organisms in toxicity testing.	L1	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain in detail the structural and functional differences between prokaryotic and eukaryotic microorganisms. Discuss their significance in microbiology.	L2	1	16
	Or			
	b Classify water, soil, and airborne pathogens. Explain their effects on human, animal, and plant health with suitable examples.	L2	1	16
12.	a Explain biosafety measures required in microbiology laboratories. Analyze their importance in preventing microbial hazards.	L4	2	16
	Or			
	b Examine the occurrence of microorganisms in water supplies. Discuss the problems they cause and methods of microbial control in water systems.	L4	2	16

13.	a	i	Describe the nutritional requirements of microorganisms and their significance in metabolism.	L2	3	8
		ii	Explain the different phases of microbial growth with a neat diagram.	L2	3	8
Or						
	b	i	Explain glycolysis with its key steps and end products.	L2	3	8
		ii	Differentiate between glycolysis and hexose monophosphate pathway.	L2	3	8
14.	a		Explain the microbiology of aerobic and anaerobic biological treatment processes with suitable examples.	L3	4	16
	Or					
	b		Discuss the processes of nitrification and denitrification. Explain the role of microbes involved in each step.	L3	4	16
15.	a	i	Define ecotoxicology. Explain the scope and importance of studying ecotoxicology.	L3	5	8
		ii	Differentiate between acute toxicity and chronic toxicity with examples.	L3	5	8
	Or					
	b	i	Describe laboratory methods of toxicity testing.	L3	5	8
		ii	What is bioconcentration? Differentiate it from bioaccumulation.	L3	5	8