

Reg. No.:



Name:

University of Kerala

U8824

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

BIOTECHNOLOGY

UK2DSCBIT109 - Fundamentals of Microbiology

Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	What is the term used to describe the scientific naming of bacteria?	RE	1
2	What are the standard parameters of autoclaving?	RE	3
3	Why is glycerol added to bacterial cultures before freezing?	UN	5
4	Name the protein present in bacterial flagella	UN	2
5	name the primary stain used to stain endospores	UN	3
6	State the role of Bergey's Manual in microbiology.	UN	1

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Explain bacterial growth curve and its phases.	UN	5
8	List four acellular infectious agents.	UN	1
9	How did Koch established the relationship of pathogen to a disease?	AP	2
10	Illustrate the correct method to streak a bacterial culture for isolation	AP	4

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) <i>Determine how the bacterial recombination contribute to genetic diversity</i> OR B)	AP	2, 4

Qn No.	Question	CL	CO
	Outline the role of selective and differential media in the isolation and identification of microorganisms.		
12	A) Analyze the structural differences on Gram positive and Negative bacterial cell wall with the help of neat labelled diagram. How does this structural difference help in their differentiation? OR B) Analyze the major milestones in the history of microbiology and explain how key discoveries have shaped our understanding of microorganisms and their role in health, disease, and the environment.	AN	4, 1
13	A) Evaluate the use of chemical anti-microbial agents in controlling microbial growth. OR B) Evaluate methods of sterilization by moist heat and dry heat.	EV	3, 3
14	A) Consider you have isolated a motile bacteria from marine water. write a stepwise protocol to perform hanging drop test for checking its motility. OR B) Develop a method for isolation of antibiotic resistant bacteria from soil.	CR	5, 4