



Reg. No.:

Name:

University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

BIOTECHNOLOGY

UK1DSCBIT103 - Fundamentals of Biotechnology

Academic Level: 100-199

2024 Admission onwards

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	Name the technique used for long term preservation of plant genome	RE	3
2	Name the first genetically engineered vaccine	RE	1
3	Describe the significance of CRISPER Cas9 technique in modern biotechnology	UN	2
4	Describe the mechanism by which microbes degrade chlorinated hydrocarbons	UN	3
5	Discuss an application of monoclonal antibody in therapeutics	UN	4
6	Identify the transgene used for Bt cotton	UN	2

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	Outline the major steps of cheese manufacturing	UN	2
8	Discuss the importance of insilico biology	UN	4
9	Explain restriction endonuclease with two examples	AP	1
10	Illustrate any two applications of livestock biotechnology	AP	3

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)	AP	4, 4

Qn No.	Question	CL	CO
	<p>Discuss the role of myeloma cells in hybridoma technology including</p> <p>a) Characteristics of myeloma b) fusion methods</p> <p>c) HAT selection d) Screening for antibody production</p> <p>OR</p> <p>B)</p> <p>Illustrate the molecular diagnostic approaches in infectious disease</p>		
12	<p>A)</p> <p>Inspect how genetic engineering finds its applications in agriculture</p> <p>OR</p> <p>B)</p> <p>Examine the role of microorganisms in fermented food production</p>	AN	2, 2
13	<p>A)</p> <p>Evaluate the potential of bioremediation in cleaning oil spill on a lake, comment on the microbial species involved</p> <p>OR</p> <p>B)</p> <p>Interpret the process of cryopreserving plant germplasm, and its application</p>	EV	3, 3
14	<p>A)</p> <p>Design a bioprocess on beer fermentation. Discuss how you will optimize parameters to increase its alcohol content</p> <p>OR</p> <p>B)</p> <p>Articulate how could genetic engineering improve the quality of GM crops?</p>	CR	1, 1