

Reg. No.:



Name:

University of Kerala

U9026

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

BIOTECHNOLOGY

UK2DSCBIT113 - Biotechnology-Concepts, Innovations and Applications

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	Name a popular gene editing tool used today	RE	4
2	Name one enzyme used in genetic engineering for cutting DNA.	RE	2
3	Give one example of an application of DNA fingerprinting in forensics.	UN	4
4	What is bioremediation?	UN	3
5	Compare euchromatin and heterochromatin in terms of function	UN	1
6	What is the relationship between genes and proteins?	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	Explain the difference between in situ and ex situ microbial bioremediation.	UN	3
8	Explain why cell is considered as the basic unit of life	UN	1
9	What are the main applications of Next Generation Sequencing?	AP	4
10	In what ways can genetically modified organisms (GMOs) contribute to sustainable agriculture ?	AP	2

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) Apply the structure and function of Golgi complex to explain its role in protein modification and transport. OR B) Write a comparison note on physical gene transfer methods and chemical gene transfer methods.	AP	1, 2
12	A) Examine the advantages and disadvantages of different gene transfer methods used in genetic engineering OR B) Why are plasmids commonly used in genetic engineering?	AN	2, 2

Qn No.	Question	CL	CO
13	A) Do you think yogurt with probiotics is better than normal yogurt? Why? OR B) Evaluate the environmental and economic benefits of bioethanol and biodiesel as alternative fuels.	EV	3, 3
14	A) Design a genetically modified organism (GMO) by selecting a desirable trait and proposing a step-by-step genetic engineering approach. OR B) Design a flow chart to explain the steps involved in DNA finger printing and add its applications.	CR	2, 4