

Reg. No.:



Name:

University of Kerala

U9022

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

BIOCHEMISTRY

UK2DSCBCH105 - Molecules of life

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	Quote an amino acid whose derivatives are thyroid hormones.	RE	1
2	Identify the type of RNA that serves as a template for protein synthesis.	RE	4
3	What is the term for an amino acid form that contains both positive and negative charges?	UN	1
4	Identify one major difference between disaccharides and polysaccharides.	UN	2
5	Identify the glycosidic linkage in cellulose.	UN	2
6	Name the classes of proteins based on shape.	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	Identify any four differences between DNA and RNA.	UN	4
8	Differentiate between complete and incomplete proteins.	UN	1
9	Examine the functions of phospholipids in biological systems.	AP	3
10	Construct a table to bring out any two differences between lactose and sucrose.	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) Discuss the roles of mRNA, tRNA, and rRNA in protein synthesis. How would a defect in one of these RNA types affect the overall process? OR B)	AP	2, 3

Qn No.	Question	CL	CO
	Describe structural and functional significance of essential and non-essential fatty acids.		
12	A) Discuss structural and storage polysaccharides in plants and animals. OR B) Discuss the bonds involved in various levels of structural organization of proteins.	AN	2, 1
13	A) Evaluate the mechanism of competitive inhibition and its significance with reference to the use of ethanol in treating methanol poisoning. OR B) How does Chargaff's rule help in understanding the base composition of DNA, and how does it support the Watson and Crick model?	EV	3, 2
14	A) Create a comparison table showing the components, glycosidic bonds, and natural sources of lactose and sucrose. OR B) Create a comparison table that explains the applications of urokinase and lipase as therapeutic enzymes.	CR	1, 3