

Reg. No.:



Name:

University of Kerala

Y8574

Second Semester FYUGP Degree Examination, June 2026

Discipline Specific Core Course

BIOCHEMISTRY

UK2DSCBCH105 - Molecules of life

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	State the stereoisomeric form in which the OH atom is projected to the right side and the H group to the left at the chiral center (C5 for glucose).	RE	2
2	State one industrial application of lipase.	RE	3
3	Which type of RNA carries amino acids to the ribosome?	UN	2
4	Explain why amino acids exist as zwitter ions in aqueous solution.	UN	1
5	Explain what is meant by a holoenzyme.	UN	3
6	Which essential amino acid starts with the letter 'L'?	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 the lock-and-key hypothesis.	UN	3
8	Distinguish between essential and nonessential amino acids with an example.	UN	1
9	Identify the components of ATP and name the purine base present in it.	AP	2
10	Apply your knowledge of glycosidic bonds to determine the components of sucrose and lactose.	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 concept of amino acid classification to distinguish between acidic, basic, and neutral amino acids using examples. OR B) Compare starch, glycogen and cellulose based on components, type of glycosidic bond and occurrence. Explain how their structure is related to their biological function.	AP	1, 2
12	A) Point out the salient features of Watson-Crick model of DNA with suitable diagram. OR B) Analyse the differences between epimers and anomers with suitable examples of carbohydrates.	AN	4, 2
13	A) Evaluate the effectiveness of industrial enzymes in the food industry, with reference to lipase, and pectinase and justify their importance. OR B) Compare the roles of mRNA, tRNA, and rRNA in protein synthesis and other cellular processes.	EV	3, 4
14	A) Design a chart showing the base composition of DNA and RNA by classifying the nitrogenous bases into purines and pyrimidines. Include suitable examples and explain the significance of these bases in the composition of nucleic acids. OR B) Construct a comparative table of therapeutic enzymes	CR	4, 3

