

Reg. No.:



Name:

University of Kerala

U8820

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

BIOCHEMISTRY

UK2DSCBCH102 - Biomolecules in living organisms

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	Mention any two general reactions of carbohydrates.	RE	4
2	Name any two sulphur containing amino acids.	RE	1
3	State the difference between saturated and unsaturated fatty acids.	UN	3
4	Distinguish between homopolysaccharides and heteropolysaccharides.	UN	2
5	Define the primary structure of a protein.	UN	1
6	Sucrose is a non-reducing sugar. Justify your answer.	UN	4

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	Summarize Chargaff rules.	UN	1
8	Identify epimers with examples.	UN	2
9	It is found that the Biuret test is negative and Ninhydrin test is positive with a particular biomolecule. What does it indicate?	AP	4
10	Chart the role of sphingomyelins and glycolipids in biological systems.	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	1, 2

Qn No.	Question	CL	CO
	Interpret the polymorphism in DNA. What are the major features of B-DNA proposed by Watson and Crick? OR B) Report the various forms of mobilizable stores of glucose such as glycogen and starch with illustrations.		
12	A) Explain the classification of carbohydrates based on their structure and function. OR B) Glucose and fructose give “bundle of hay” shaped osazone crystals (i) Explain the reaction mechanism behind osazone formation. (ii) Comment on why both sugars give same type of osazones. (iii) Compare and contrast the tests used to distinguish glucose from fructose.	AN	2, 2
13	A) Discriminate the secondary and tertiary structure of proteins with suitable examples. OR B) Consider the reaction and principle of the test to distinguish reducing sugars from non-reducing sugars. Both Benedict’s and Barfoed’s tests are based on the reducing property of sugars. Discriminate their reaction mechanism.	EV	1, 4
14	A) Develop a table that shows the formula and explanation of various concentration terms such as molarity, normality and mass percentage. OR B) Write the properties of polysaccharides such as cellulose, starch and glycogen in terms of their structure and function.	CR	4, 2