

Reg. No.:



Name:

University of Kerala

U8698

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

BIOTECHNOLOGY

UK2DSCBIT106 - Biomolecules

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 protein with a quaternary structure composed of four subunits	RE	1
2	Name the type of lipid backbone in cerebrosides	RE	1
3	Differentiate between oxidative phosphorylation and substrate level phosphorylation	UN	3
4	Identify the principle behind Molisch's test?	UN	4
5	Explain transamination?	UN	3
6	State the structural difference between glycogen and starch	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 how the bicarbonate buffer system maintains blood pH	UN	1
8	Briefly explain β -oxidation of fatty acids	UN	3
9	Differentiate between monosaccharides and disaccharides providing examples.	AP	1
10	Write on the difference between DNA and RNA in terms of structure and function?	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) Explain the particular features of component molecules of DNA, which adds to the stability of the molecule and illustrate the specific linkages within the molecule using diagrams. OR B) Describe the role of the salvage pathway in nucleotide metabolism.	AP	3, 3

Qn No.	Question	CL	CO
12	A) Analyze the importance of viral glycoproteins in vaccine development? OR B) Analyze and contrast the structural and functional roles of cellulose and chitin.	AN	2, 1
13	A) Compare and contrast the De Novo and Salvage pathways of purine and pyrimidine nucleotide synthesis. OR B) Evaluate the impact of protein misfolding on diseases such as Alzheimer's and sickle cell anemia	EV	3, 2
14	A) Milk is often adulterated with starch to increase thickness. How would you test for both protein and starch in a milk sample? Explain the method and results. OR B) Propose a novel method for increasing glycogen storage efficiency in athletes.	CR	4, 3