



Reg. No.:

Name:

University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

BIOCHEMISTRY

UK1DSCBCH101 - Foundations of biochemistry

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	Define a covalent bond.	RE	2
2	List out the bonds common in biomolecules.	RE	2
3	What is the function of ribosomes?	UN	1
4	Describe central dogma	UN	3
5	Indicate the name of membrane bound subcellular organelle known as suicidal bag.	UN	1
6	Indicate any two viruses with DNA as the genetic material.	UN	3

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	What are the functions of mitochondria?	UN	1
8	Explain the characteristics of hydrogen bonds.	UN	2
9	Show how did Meselson-Stahl experiment , confirm DNA replication is semiconservative	AP	3
10	Explain why DNA is more stable than RNA.	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, 1

Qn No.	Question	CL	CO
	<p>Apply your knowledge of cell organelles to explain why muscle cells contain significantly more mitochondria than skin cells.</p> <p>OR</p> <p>B)</p> <p>Prepare a table summarizing the functions of subcellular organelles.</p>		
12	<p>A)</p> <p>Explain Hershey Chase Blender experiment.</p> <p>OR</p> <p>B)</p> <p>Compare ionic, covalent, and hydrogen bonds in biomolecular interactions.</p>	AN	3, 2
13	<p>A)</p> <p>Compare the properties of DNA and RNA.</p> <p>OR</p> <p>B)</p> <p>Summarize the transformation of R-strain pneumococcus into S-strain in Griffith's experiment and explain how the Hershey–Chase experiment further demonstrated that DNA, rather than protein, is the molecule responsible for genetic inheritance.</p>	EV	3, 3
14	<p>A)</p> <p>Propose a waste-management system for a biochemistry lab.</p> <p>OR</p> <p>B)</p> <p>Design a safety plan for a student laboratory handling acids and heating equipment.</p>	CR	4, 4