



Reg. No.: .....

Name: .....

## University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

### BIOCHEMISTRY

**UK1DSCBCH103 - Biochemical and biophysical aspects 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	Name a emulsifying agent.	RE	2
2	Define an Arrhenius acid and provide an example.	RE	1
3	What happens to a cell in a Hypertonic solution?	UN	2
4	Identify the Lewis base in the reaction $\text{BF}_3 + \text{NH}_3$ .	UN	1
5	What happens to pH if $\text{H}^+$ concentration increases?	UN	1
6	What is the conjugate base of HCl?	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	What is a buffer solution and how does it resist change in pH when small amount of acid or base is added?	UN	1
8	Distinguish between lyophilic colloid and lyophobic colloid	UN	2
9	Illustrate cell theory.	AP	3
10	Interpret the role of glycosidic bond and it's significance.	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	<p>A) Apply the concept of polarity to explain why water is an excellent solvent for ionic compounds.</p> <p>OR</p> <p>B) Apply the significance of buffers in biological systems.</p>	AP	2, 1
12	<p>A) Describe the structure of a virus.</p> <p>OR</p> <p>B) Analyse the role and significance of peptide bond, and glycosidic bond.</p>	AN	3, 2
13	<p>A) Evaluate the importance of the Nucleus as the control center of the cell.</p> <p>OR</p> <p>B) Critically evaluate the unique structural and functional characteristics of viruses that differentiate them from cellular life forms with the help of a well-labelled diagrammatic illustration.</p>	EV	3, 3
14	<p>A) Create a chart classifying organisms based on cell type (Prokaryotes vs Eukaryotes) with examples.</p> <p>OR</p> <p>B) Create a visual diagram that illustrates the key differences between prokaryotic and eukaryotic cells, including their structures and functions.</p>	CR	3, 3