



Reg. No.:

Name:

University of Kerala

First Semester FYUGP Degree Examination, December 2025

Discipline Specific Core Course

BIOCHEMISTRY

UK1DSCBCH102 - Origin 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 | Who proposed the theory of chemical evolution? | RE | 1 |
| 2 | Name the scientists who postulated Cell theory. | RE | 3 |
| 3 | "All living cells arise from pre-existing cells." Name the scientist who made this proposal. | UN | 2 |
| 4 | List the differences between an animal cell and a virus. | UN | 3 |
| 5 | Give an example of natural selection in insects. | UN | 2 |
| 6 | Which unique bio polymer is present in bacterial cell walls? | 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 | Explain any two characteristics of living matter. | UN | 1 |
| 8 | Identify two characteristics that define living organisms and justify their importance. | UN | 1 |
| 9 | How natural selection is useful in the generation of new traits in population? Justify with examples | AP | 2 |
| 10 | Apply your knowledge to differentiate rooted and unrooted phylogenetic tree with diagrams | 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) | AP | 1, 3 |

| Qn No. | Question | CL | CO |
|--------|---|----|------|
| | <p>Apply Priestly's findings to explain the mutual relationship between plants and animals in maintaining the balance of gases in nature</p> <p>OR</p> <p>B)</p> <p>Demonstrate how each organelle in a eukaryotic cell contributes to the cell's overall function.</p> | | |
| 12 | <p>A)</p> <p>Explain Priestley's experiment on photosynthesis and describe how it contributed to the understanding of oxygen evolution.</p> <p>OR</p> <p>B)</p> <p>Analyse how the Miller-Urey experiment supports or contradicts Oparin-Haldane hypothesis.</p> | AN | 1, 1 |
| 13 | <p>A)</p> <p>Evaluate the significance of the Oparin-Haldane hypothesis in explaining chemical evolution.</p> <p>OR</p> <p>B)</p> <p>Summarize the Oparin-Haldane hypothesis and relate how the Miller -Urey experiment provide experimental evidence for this hypothesis</p> | EV | 1, 1 |
| 14 | <p>A)</p> <p>Design a bacterial cell with structural features different from a normal bacterium. Describe the new structures or modifications you would add and explain how each change helps the bacterium survive better in its environment.</p> <p>OR</p> <p>B)</p> <p>Create a simple diagram or poster that shows the key differences and similarities between viruses and bacteria.</p> | CR | 3, 3 |