

QP CODE: 24900272



Reg No:.....

Name:.....

**MAHATMA GANDHI UNIVERSITY, KOTTAYAM**

**FIRST SEMESTER MGU-UGP (HONOURS)**

**REGULAR EXAMINATION NOVEMBER 2024**

**First Semester**

**Discipline Specific Core Course - MG1DSCZIM102**

**FUNDAMENTALS OF BIOCHEMISTRY**

(2024 ADMISSION ONWARDS)

Duration: 1.5 Hours

Maximum Marks: 50

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Interest (I),  
Appreciation (Ap), and Skill (S)**

*Students should attempt atleast one question from each course outcome to enhance their overall  
outcome attainability.*

[Learning Domain][CO No(s)]

**Part A**

Fill In The Blanks

Answer all questions

Each question carries 1 mark

- |   |  |     |     |
|---|--|-----|-----|
| 1 | Theory of special creation states that life was created by.....                          | [U] | [1] |
| 2 | .....was first scientist to view living cell under microscope.                           | [U] | [1] |
| 3 | pH of the blood is.....  | [A] | [2] |
| 4 | Buffers resist change in.....when small amount of acid or base are added                 | [K] | [2] |
| 5 | ..... membrane proteins embedded within the phospholipid bilayer                         | [U] | [3] |
| 6 | .....transport is the movement of molecules across a cell membrane without using energy. | [U] | [3] |
| 7 | Uniport is the movement of one type of molecules in.....direction.                       | [U] | [4] |

- |    |  |         |
|----|--|---------|
| 8  | A network of membranous tubules and cisternae within the cytoplasm of eukaryotic cell is called..... | [U] [4] |
| 9  | Photolysis of water occurs in..... photophosphorylation  | [K] [5] |
| 10 | The first stable product of C4 cycle is.....   | [K] [5] |

(10 × 1 = 10)

### Part B

#### Short Questions

Answer 10 questions

Each question carries 2 marks

- |    |  |         |
|----|--|---------|
| 11 | Write short note on origin of life.                  | [A] [1] |
| 12 | State Theory of special creation .                   | [K] [1] |
| 13 | State Theory of biogenesis.                          | [K] [1] |
| 14 | Explain Louis Pasteur Swan neck Flask Experiment.    | [U] [1] |
| 15 | Explain the difference between strong and weak acid. | [U] [2] |
| 16 | Describe pH scale.                                   | [U] [2] |
| 17 | Describe amphitropic proteins.                       | [U] [3] |
| 18 | Write short note on simple diffusion.                | [K] [3] |
| 19 | Write short note on simple diffusion.                | [K] [4] |
| 20 | Define Osmosis.                                      | [K] [4] |
| 21 | Write short note on non cyclic photophosphorylation. | [A] [5] |
| 22 | Explain the role of RuBisCo in Carbon fixation.      | [U] [5] |

(10 × 2 = 20)

### Part C

#### Short Essay Type Questions

Answer 5 questions

Each question carries 4 marks

- |    |  |         |
|----|--|---------|
| 23 | Define biogenesis and explain its significance in understanding life's origin. | [K] [1] |
| 24 | Discuss the Scope of biochemistry in modern biology.                           | [U] [1] |
| 25 | Draw structure of water molecule with their bond angle.                        | [K] [2] |

- 26 Explain the mechanism of facilitated diffusion with diagram. [U] [3]
- 27 Describe the process of Osmosis. [U] [4]
- 28 Contrast between symbiotic and non symbiotic nitrogen fixation. [An] [5]
- 29 Write an essay on larger subunit of nitrogenase enzyme. [A] [5]

(5 × 4 = 20)

**END OF THE QUESTION PAPER**

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