

**BBCCT-101**

**ASSIGNMENT BOOKLET**

**Bachelor's Degree Programme  
B.Sc. Hons in Biochemistry (BBCH)**

**MOLECULES OF LIFE**

**Valid from 1<sup>st</sup> July, 2021 to 31<sup>st</sup> Dec, 2022**



**School of Sciences  
Indira Gandhi National Open University  
Maidan Garhi  
New Delhi-110068.**

Dear Student,

Please read the section on assignments in the Programme Guide for Core Courses that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, **which would consist of one tutor-marked assignment** for this course. The assignment is in this booklet, and it consists of three parts, Part A, B and C. The total marks of all the parts are 100, of which 35% are needed to pass it.

### Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

- 1) On top of the first page of your answer sheet, please write the details exactly in the following format:

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**ROLL NO.:** .....

**NAME:** .....

**ADDRESS:** .....

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**COURSE CODE:** .....

**COURSE TITLE:** .....

**ASSIGNMENT NO.:** .....

**STUDY CENTRE:** ..... **DATE:** .....

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**PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.**

- 2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) Complete each of Part A, Part B and Part C of this assignment separately, and **submit them together.**
- 6) The assignment answer sheets are to be submitted to your Study Centre as per the schedule made by the study centre. **Answer sheets received after the due date shall not be accepted.**

**We strongly suggest that you retain a copy of your answer sheets.**

- 7) This assignment is **valid from 1<sup>st</sup> July, 2021 to 31<sup>st</sup> Dec, 2022** and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the exam form for this course** till you have submitted this assignment.

We wish you good luck.

ASSIGNMENT  
MOLECULES OF LIFE

**Course Code: BBCCT-101**  
**Assignment Code: BBCCT-101/TMA/2021-2022**  
**Maximum Marks: 100**

Answer **all the questions** given below. All Questions carry equal marks.

1. A) Write a brief note cellular and chemical foundation of life.  
B) Explain the tetrahedral geometry of water molecule. (5+5) 10
2. A) Define the following terms:  $p^H$ , Buffer solution and  $p^{Ka}$ .  
B) Explain the classification of amino acids based on R-group. (5+5) 10
3. A) Describe the importance of non-standard amino acids and draw their structures.  
B) With the help of neatly labelled diagrams explain the tertiary and quaternary structure of proteins. (5+5) 10
4. A) What is glycosidic bond? Explain different types of glycosidic bonds with suitable example?  
B) Explain amino sugars with the help of their structures. (5+5) 10
5. Write a detailed note on plant and animal storage polysaccharides with suitable diagrams and examples. (5+5) 10
6. A) Explain the classification of glycoconjugates with suitable examples.  
B) Write note blood group antigens. (5+5) 10
7. A) Enlist the functions of biological membranes?  
B) Explain the importance of sphingolipids in biological membranes. (5+5) 10
8. A) Write a detailed note on classification of vitamins with relevant examples. 10
9. A) Describe the constituents of nucleic acids with suitable structures.  
B) With the help of a neatly labelled diagram explain Griffith's transformation experiment (5+5) 10
10. A) Draw the structure of t-RNA and explain its important characteristic features.  
B) Give a detailed note on effect of temperature and pH on DNA structure. (5+5) 10