

BBCCT-105

ASSIGNMENT BOOKLET

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

**Valid from 1st July, 2020 to 30th
June, 2021**



**School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068
(2020-2021)**

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 two parts, Part A and B. 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:

ROLL NO.:

NAME:

ADDRESS:

.....

.....

COURSE CODE:

COURSE TITLE:

ASSIGNMENT NO.:

STUDY CENTRE:

DATE:

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 both of Part A and Part B of this assignment, 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 1st July, 2020 to 30th June, 2021.** If you have failed in this assignment or fail to submit it by June, 2021, then you need to get the assignment for the year 2021-22, 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 PROTEINS

Course Code: BBCCT-105
Assignment Code: BBCCT-105/TMA/2020-2021
Maximum Marks: 100

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

PART-A

1. A. Define the term “Peptide”. Write a note on biological importance of Insulin and Glutathione.
B. With the help of suitable diagram explain Ramachandran plot. (5+5= 10)
2. A. Distinguish between Solid and Liquid shear methods of cell extraction.
B. Give a note on the separation technique that works based on “diffusion” principle. (5+5= 10)
3. A. Illustrate the steps involved in fractionation of human plasma proteins.
B. Define the following terms: R_f value, Stationary phase, Mobile Phase, and Ion exchanger. (5+5 = 10)
4. A. Explain the principle of electrophoresis technique with the help of suitable diagram. Justify the advantages of SDS-PAGE over Native PAGE?
B. Write a brief note on protein sequencing by Sanger method. (5+5 = 10)
5. A. Describe the principle of Mass Spectrometry and give five applications of it.
B. Write a note on enzyme-based degradation of proteins using suitable examples. (5+ 5 = 10)

PART-B

6. A. What is NMR? Write the principle of NMR and write four applications of it.
B. Compare and Contrast the structural characteristics of hemoglobin and myoglobin. (5+5 = 10)
7. A. Enlist the stabilising forces that contribute thermodynamics of proteins. Give any two probable reasons for protein mis-folding.
B. Define chaperones and write a note on their biological importance. (5+5 = 10)
8. A. Explain about biological data bases with suitable examples.
B. Write a short note on specific functions of proteins with appropriate examples. (5+5 = 10)
9. A. Illustrate the sliding filament theory of muscle contraction with a neat diagram.
B. Explain the effect of various factors on oxygen dissociation curves. (5+5 = 10)
10. A. What is immunoglobulin? Describe the structure of Ig G with a neat diagram.
B. Write a detailed note on Bohr effect. (5+5= 10)