BBCCT-105

ASSIGNMENT BOOKLET

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

Valid from 1st January, 2021 to 31st December, 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 January, 2021 to 31st December, 2021**. If you have failed in this assignment or fail to submit it by 31st December, 2021, then you need to get the assignment for the year 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
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 forces that contribute to thermodynamic stability 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)