

BBCCT-107

ASSIGNMENT BOOKLET

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

ENZYMES

Valid from 1st Jan, 2022 to 31st Dec, 2022



**School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068
(2022)**

Dear Student,

Please read the section on assignments in the Programme Guide for B. Sc. (Hons) Biochemistry 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. It covers all blocks of the course. 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) Solve Part (A) and Part (B) of this assignment, and **submit the complete assignment answer sheets within the due date.**
- 6) The assignment answer sheets are to be submitted to your Study Centre within the due date. **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 Jan, 2022 to 31st Dec, 2022**. If you have failed in this assignment or fail to submit it by Dec, 2022, then you need to get the assignment for the year 2023-24, and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the examination form for this course** until you have submitted this assignment.

We wish you good luck.

ASSIGNMENT

Enzymes Core Course in Biochemistry

Course Code: BBCCT-107
Assignment Code: BBCCT-107/TMA/2022
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it. Write all answers in your own words; do not copy from the course material.

PART-(A)

(50)

1. Define the following terms: (2*5=10)
 - a) Activation energy
 - b) Prosthetic Group
 - c) Oxidoreductases
 - d) Turnover number
 - e) Lineweaver-Burk plot
2. a) Give an overview of active site of enzyme. (5)
b) What is the effect of temperature on enzyme activity? (5)
3. a) Explain Induced Fit Model Hypothesis. (5)
b) What is the significance of V_{max} and K_m ? (5)
4. Differentiate between: (5+5=10)
 - a) Sequential and Non-sequential mechanism.
 - b) Reversible and Irreversible enzyme inhibitors
5. Derive Michaelis-Menten equation for a competitive inhibitor. (10)

PART-(B)

(50)

6. a) Explain the covalent catalysis mechanism of enzyme. (5)
b) What is acid-base catalysis? (5)
7. a) How compartmentation helps to control metabolic pathways? (5)
b) Distinguish between NAD and FAD coenzymes. (5)
8. What are Allosteric enzymes? Give examples and discuss their physiological role. (10)
9. Discuss application of enzymes in the following: (5+5 =10)
 - i) Detergent industry
 - ii) Starch industry
10. Explain the following methods of enzyme immobilization (5+5 =10)
 - i) Microencapsulation
 - ii) Metal Binding

