

BBCCT-125

ASSIGNMENT BOOKLET

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

GENETIC ENGINEERING AND BIOTECHNOLOGY

Valid from January, 2023 to Dec, 2023



**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:

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 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 1st January, 2023 to 31st Dec, 2023** 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-125
Assignment Code: BBCCT-125/TMA/2023-2023
Maximum Marks: 100

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

1. A) Write a brief note on restriction endonucleases used in Biotechnology.
B) Differentiate between southern and northern blotting techniques. (5+5) 10
2. Define the following terms and their applications with suitable examples: Linkers, adapters, vectors and fusion tags. 2.5 x 4 =10
3. A) Describe and draw the structure of Ti plasmid.
B) With the help of neatly labelled diagram explain the structure of pBR322. (5+5) 10
4. A) What is C-DNA library?
B) Explain stages of construction of genomic library?
C) Pyrosequencing. (2+4+4) 10
5. Write a detailed note on Sanger's and Maxam & Gilbert DNA sequencing. (5+5) 10
6. A) What is GMO. Discuss the problems with GMO's.
B) Give a detailed account on applications of recombinant biotechnology in pharmaceuticals. (5+5) 10
7. A) Write a short note on recombinant vaccines?
B) Explain the importance of protein engineering with reference to purification of enzymes and hormones. (5+5) 10
8. Describe the techniques used for the *invitro* amplification of DNA and write its applications. 10
9. A) What is site-directed mutagenesis? Enlist its applications in the field of biotechnology.
B) Write any two methods used for selection of transformed cells. (5+5) 10
10. A) Illustrate the procedure employed for the introduction of foreign DNA into animal cells.
B) What is gene transfer? Describe shotgun and electroporation methods. (5+5=10)