This question paper contains **2** printed pages]

NY—02—2023

FACULTY OF SCIENCE

M.Sc. (Second Year) (Third Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(CBCS/New Pattern)

BIOTECHNOLOGY

Paper-IX

(Genetic Engineering)

(Tuesday, 5-12-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—3 *Hours* *Maximum Marks*—75

N.B. :— (1) Attempt *all* questions.

(2) *All* questions carry equal marks.

(3) Represent your answers with well labelled diagrams.

1. Define Restriction enzymes. Describe in detail properties of different types of restriction enzymes. 15

Or

Define Vectors. Describe in detail structure of plasmid vectors.

2. Describe in detail methods of preparation of *c*DNA library. 15

Or

Explain the following :

(*a*) DNA Fingerprinting

(*b*) Blotting.

3. Describe in detail types of PCR and its applications. 15

P.T.O.

Or

Describe in detail DNA sequencing methods.

4. Describe in detail physical and chemical methods of gene transfer. 15

Or

Describe in detail production of recombinant vaccines and insulin.

5. Write short notes on (any *three)* : 15

(*a*) λ phage vectors

(*b*) DNA footprinting

(*c*) Applications of protein engineering

(*d*) Gene therapy

(*e*) Chromosome walking.