(Pages : 2) **S – 6889**

Reg. No. : .....

Name : .....

Third Semester M.Sc. Degree Examination, February 2024

Biotechnology

BT 303 : GENETIC ENGINEERING

(2020 Admission Onwards)

Time : 3 Hours Max. Marks : 75

I. Answer **any two** of the following.

1. Describe the steps in the preparation of cDNA library.
2. Explain the steps in Sanger's method of DNA sequencing? Mention its advantages.
3. Discuss the importance of Agrobacterium in plant genetic engineering.

(2 × 15 = 30 Marks)

II. Answer any **nine** of the following.

4. Describe the characteristics of an ideal cloning vector.
5. What are restriction enzymes and mention its significance?
6. Explain the principle of *in situ* Hybridization technique.
7. Outline the steps in Shot gun sequencing.
8. Elaborate on the principle of RT-PCR.
9. What are recombinant proteins? Mention its applications.
10. Describe the applications of DNA fingerprinting.

P.T.O.

11. What are shuttle vectors? Mention its importance in genetic engineering?

12. Explain site directed mutagenesis?

13. Differentiate between microsatellite and minisatellite?

14. Explain the steps in RFLP.

15. Outline the principle behind Knockout of genes by CRISPR-Cas9.

(9 × 5 = 45 Marks)

———————