



K22P 1373

Reg. No. :

Name :

**III Semester M.Sc. Degree (CBSS – Reg./Sup./Imp.) Examination, October 2022
(2019 Admission Onwards)**

BOTANY

BOT3E02 : Genetic Engineering

Time : 3 Hours

Max. Marks : 60

Instruction : Draw diagram *wherever* necessary.

SECTION – A

1. a) Discuss on the different types of recombinant vectors used in molecular cloning.

OR

- b) Describe the various physical delivery methods used for transgenesis.

2. a) Write an account on blotting techniques. Add notes on dot blots.

OR

- b) Explain the working principle of PCR. Mention its types and applications.

(2×8=16)

SECTION – B

Answer **any two** :

3. a) Describe mutagens.

- b) What do you mean by mutagenesis ?

- c) Explain site directed mutagenesis for crop improvement.

(1+2+3)

4. a) What is biosafety ?

- b) Explain recombinant DNA safety.

- c) Give an account of biosafety practices and aspects of transgenic plants.

(1+2+3)

P.T.O.



5. a) What are fusion proteins ?
- b) Write notes on enzyme immobilization.
- c) Discuss the recent trends in enzyme/protein engineering.

(1+2+3)
(2×6=12)

SECTION – C

Answer **any six** :

6. Describe IPR, patenting and related laws.
7. Explain the protocol for single cell protein production on a large scale.
8. Describe hybridoma technology and its uses.
9. Compare genomic library and C-DNA library.
10. Give an account of nucleic acid microarrays.
11. Explain antisense RNA technology.
12. Describe the expression strategies for heterologous genes.
13. Explain the terms metabolome and metabolomics.

(6×3=18)

SECTION – D

Answer **any seven** :

14. TILLING in molecular biology.
15. Cis-genesis.
16. Patent infringement.
17. Biological hazards.
18. AFLP.
19. Bio-farming.
20. Charomids.
21. DNA linkers.
22. Bt cotton in India.
23. Gene therapy.

(7×2=14)

CENTRAL LIBRARY