K21P 0966

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (CBSS – Reg./Suppl./Imp.) Examination, October 2021
(2018 Admission Onwards)
BOTANY
BOT3E02 : Genetic Engineering

Time : 3 Hours Max. Marks : 60

Instruction : *Draw diagram* ***wherever*** *necessary.*

SECTION – A

1. a) Explain major achievements of biotechnology in India.

   OR

   b) Give an account of enzyme biotechnology.

2. a) Explain gene mapping techniques.

   OR

   b) Explain the methods of isolation, purification, characterization of recombinant proteins. **(2×8=16)**

SECTION – B

Answer **any two**.

3. a) What is codon optimization ?
   b) Explain vector engineering.
   c) Give an account of expression of heterologous genes in bacteria. **(1+2+3)**

4. a) What is patent ?
   b) Explain patenting laws.
   c) Give an account of legal protection for plants. **(1+2+3)**

5. a) What is electroporation ?
   b) Explain liposome mediated gene delivery.
   c) Give an account of transgenic plants. **(1+2+3)**

(2×6=12)

P.T.O.

SECTION – C

Answer **any six**.

6. Explain the methods of production of monoclonal antibodies.
7. Write an account of screening and expression of cloned genes.
8. Write an account of antisense technology.
9. Write an account of systems biology.
10. Explain applications of marker assisted selection in plants.
11. Explain the proteinsic approaches of biotechnology.
12. Write an account on enzymes used in gene cloning.
13. Explain micro array techniques. **(6×3=18)**

SECTION – D

Answer **any seven**.

14. Gene therapy.
15. Vaccines.
16. Bio-insecticides.
17. DNA adaptors.
18. Ri-plasmid.
19. Reverse transcription.
20. Western blotting.
21. Polymerase chain reaction.
22. Genomics.
23. Bt-cotton. **(7×2=14)**