K25P 2867

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (C.B.C.S.S. – O.B.E. – Reg./Supple./Imp.) Examination, October 2025
(2023 Admission Onwards)
BOTANY
MSBOT 03 C 13 : Genetic Engineering, Plant Biotechnology and Bioinformatics

Time : 3 Hours Max. Marks : 60

***Instruction** : Draw diagrams **wherever** necessary.*

SECTION – A

Answer **any 5**. **(5×3=15)**

1. Describe barnase and barstar.
2. Give an account of non-GMO techniques for crop improvement.
3. Comment on somatic hybridization.
4. Explain the process of liposome-mediated DNA delivery.
5. Describe various chemical databases.
6. Explain the elicitation and immobilization of cells in tissue culture.

SECTION – B

Answer **any 3**. **(3×6=18)**

7. Differentiate and explain yeast two hybrid and three hybrid systems.
8. Comment on variants of PCR and their applications.
9. Explain the production, importance, limitation and utilization of synthetic seeds.
10. Comment on hairy-root culture.
11. Describe various Protein sequence databases.

P.T.O.

SIR SYED COLLEGE CENTRAL LIBRARY KANNUR UNIVERSITY

SECTION – C

Answer **any 3**. **(3×9=27)**

12. Give an account of various transformation procedures and selection strategies in gene cloning.

13. Explain various applications and achievements of genetic engineering in medicine, food and industry.

14. Describe various reasons for somaclonal variations.

15. Comment on eukaryotic genome with special references to Yeast and *Arabidopsis thaliana*.

16. Explain the basic concepts of genetic engineering.

———————

SIR SYED COLLEGE
CENTRAL LIBRARY
KANNUR UNIVERSITY