K22P 1372

Reg. No. : .....

Name : .....

III Semester M.Sc. Degree (CBSS – Reg./Sup./Imp.)
Examination, October 2022
(2019 Admission Onwards)
BOTANY
BOT3E01 : Biotechnology and Bioinformatics

Time : 3 Hours Max. Marks : 60

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

SECTION – A

1. Explain organogenesis in plants. Describe the different factors affecting organogenesis in plants.

OR

Explain the different types of callus with their anatomical features and describe their regenerative potential. Explain the advantages and disadvantages of callus culture.

2. What are Vectors ? Explain different types of vectors used in genetic engineering with their merits and demerits.

OR

Explain the strategies used in developing insect resistant plants with special emphasis on Bt toxins. Explain the regulatory mechanism for release of transgenic Bt crops. (2×8=16)

SECTION – B

Answer **any two.**

3. a) Importance of SNP database.
   b) EST databases.
   c) Neural networks. (2+2+2=6)

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4. a) *Agrobacterium rhizogenes*-utility in plant biotechnology.
   b) DNA bank.
   c) Edible vaccines. (2+2+2=6

5. a) Vitrification.
   b) Somaclonal variation
   c) Caulogenesis. (2+2+2=6

SECTION – C

Answer **any six.**

6. What is dedifferentiation ?
7. Explain the need of acclimatisation of tissue culture raised plants.
8. Bulbosum method.
9. Importance of haploids.
10. Macerozymes.
11. Gene Knockout.
12. e-value.
13. Roundup ready plants. (6×3=18

SECTION – D

Answer **any seven.**

14. NEB cutter.
15. Gene parsing.
16. Pusztai affair.
17. Plasticity in plants.
18. K-tupule.
19. Alpha complementation.
20. Gene pyramiding.
21. pBR 322.
22. CINEMA.
23. Cybrid. (7×2=1

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