



B.Sc. V Semester Degree Examination, Sept./Oct. - 2024

BIOTECHNOLOGY

Bt - 5.1 : Plant Biotechnology

(NEP)

Time : 2 Hours

Maximum Marks : 60

- Note :** (i) Answer **all** sections.
(ii) Draw labelled diagrams wherever necessary.

SECTION - A

1. Answer the following sub-questions : **10x1=10**
- (a) Expand IVF.
 - (b) What is Totipotency ?
 - (c) Define Plant Biotechnology.
 - (d) What do you mean by secondary metabolites ?
 - (e) What is transgenic plant ?
 - (f) Define Gene Stacking.
 - (g) What is Agriculture ?
 - (h) Define the term transgenic expression.
 - (i) Expand GMOs.
 - (j) Define CRISPR.

SECTION - B

Answer **any four** of the following questions : **4x5=20**

- 2. Explain the term "Callus" and its importance in the regeneration of plants in vitro.
- 3. Explain briefly about the applications of secondary metabolites in pharmaceuticals.
- 4. Give the brief account of the Role of Foreign genes in transgenic plants.
- 5. Analyse the methods employed for verifying transgene expression in plants.
- 6. Discuss the role of emerging trends in plant biotechnology.
- 7. Write a short note on socio-economic impacts of transgenic crops on farmers.



SECTION - C

Answer **any three** of the following questions :

3x10=30

8. Compare and contrast direct and indirect organogenesis in plant tissue culture.
9. Elaborate on the techniques used for yield enhancement in vitro cultures.
10. Explore the ethical considerations associated with the use of transgenic plants.
11. Analyse the challenges and limitations faced in the field of transgenic plant research.
12. Discuss the economic benefits of transgenic crops for farmers.

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