



DCGN – 502

V Semester B.Sc. Examination, February/March 2024
(NEP) (Freshers)
GENETICS (Paper – VI)
Plant Cells and Tissue Culture Technology

Time : 2½ Hours

Max. Marks : 60

Instruction : Draw diagrams *wherever* necessary.

PART – A

I. Answer **any four** of the following :

(4×2=8)

- 1) Define totipotency.
- 2) What is an explant ?
- 3) Name two horticulturally important plant.
- 4) List the applications of anther culture.
- 5) What are secondary metabolites ?
- 6) Write short notes on Herbicide resistance plants.



PART – B

II. Answer **any four** of the following :

(4×5=20)

- 7) Explain the physical method of sterilization.
- 8) What is meant by organogenesis ?
- 9) Write the technique involved in initiation of cultures.
- 10) Write a brief note on endosperm culture.
- 11) How are somaclones produced ?
- 12) List the applications of plant genetic engineering.

P.T.O.



PART – C

III. Answer **any four** of the following :

(4×8=32)

- 13) Explain the role of chemicals in plant tissue culture and add a note on growth regulators.
- 14) Give a detailed account of somatic embryogenesis and add a note on organ culture.
- 15) Describe the method of isolation, culture and fusion of protoplast.
- 16) Illustrate the basic principle of clonal propagation.
- 17) Explain in detail cryopreservation and germplasm conservation.
- 18) Write short notes on :
 - a) Bt cotton
 - b) Round up ready soybean.

