

2022

BOTANY — HONOURS

Paper : DSE-B-1

(Plant Biotechnology)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer **any five** questions :

2×5

- Which method is used for sterilization of thermolabile components of plant tissue culture medium?
- What is reporter gene?
- Define fusogen with an example.
- State two advantages of artificial seeds.
- Define totipotency.
- What is Flavr-Savr tomato?
- What is a cybrid?
- Name two direct gene transfer methods.

2. Answer **any two** questions :

- What is suspension culture? Mention its importance. 2½+2½
- Write a short note on the components of a plant tissue culture medium. 5
- Write a short note on 'Superbug'. 5
- What is de-differentiation? State its importance in plant tissue culture. 2+3

3. Answer **any three** questions :

- Discuss the process of T-DNA transfer from *Agrobacterium tumefaciens* to plant cells with the help of a flow chart. 6+4
- What do you mean by direct and indirect organogenesis? What are caulogenesis and rhizogenesis? State the importance of organogenesis. 4+3+3
- Write short notes on (**any two**) : 5×2
 - Bt* cotton
 - Herbicide resistant transgenic plants
 - Ti plasmid.
- With suitable flow chart enumerate methods of protoplast isolation, purification and culture. 3+2+5
- What is haploid culture? With suitable flow chart enumerate one method for anther culture. State the importance of haploid culture. 2+6+2