

Total No. of Printed Pages—3

**6 SEM TDC BOTH (CBCS) C 14**

**2 0 2 4**

( May )

**BOTANY**

( Core )

Paper : C-14

**( Plant Biotechnology )**

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Answer the following questions : 1×5=5
- (a) What is foreign DNA?
  - (b) Define gene cloning.
  - (c) Who is known as the father of genetic engineering?
  - (d) What is the full form of YAC ?
  - (e) Write the name of the first transgenic plant variety introduced to the market.

( 2 )

2. Write briefly on any *five* of the following :  $2 \times 5 = 10$

- (a) Synthetic seed
- (b) Bt cotton
- (c) Flavr Savr tomato
- (d) Protoplast fusion
- (e) Cybrids
- (f) Ti-plasmid

3. Write short notes on any *four* of the following :  $5 \times 4 = 20$

- (a) Reporter genes
- (b) Types of cloning vectors
- (c) Enzymes required for recombinant DNA technology
- (d) Germplasm conservation
- (e) Edible vaccine
- (f) Herbicide-resistant plants

4. What is micropropagation? Discuss the various stages involved in micropropagation.

$1 + 7 = 8$

Or

Discuss the mechanism of bacterial transformation.

8

( 3 )

5. Discuss in detail the procedure for the Agrobacterium-mediated gene transfer. Mention the application of Agrobacterium-mediated gene transfer. 8+2=10

Or

Discuss about the application of genetic engineering in bioremediation and in horticulture. 5+5=10

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