

B.Sc. T. Y. (CBCS Pattern) Semester-VI  
**012F - Botany Paper-II : Plant Biotechnology-II**

P. Pages : 2

Time : Three Hours



**GUG/W/24/13332**

Max. Marks : 50

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- Notes :
1. All questions are compulsory and carry equal marks.
  2. Illustrate your answers with suitable examples and draw well labelled diagrams wherever necessary.

**1.** Write notes on:

- |  |   |
|--|---|
| a) Describe Silicon carbide method with its Advantages.      | 5 |
| b) Describe Microprojectile bombardment with its Advantages. | 5 |

**OR**

Write short notes on:

- |  |    |
|--|----|
| c) Microinjection                              | 2½ |
| d) Electroporation                             | 2½ |
| e) Silicon carbide method disadvantages.       | 2½ |
| f) Microprojectile bombardments disadvantages. | 2½ |

**2.** Write notes on:

- |   |   |
|---|---|
| a) Agrobacterium mediated gene transfer method.             | 5 |
| b) What is reporter gene? Describe it with luciferase gene. | 5 |

**OR**

Write short notes on:

- |                                |    |
|--------------------------------|----|
| c) Selectable marker gene      | 2½ |
| d) GUS                         | 2½ |
| e) GFP                         | 2½ |
| f) Organization of Ti plasmid. | 2½ |

**3.** Write notes on:

- |   |   |
|---|---|
| a) Describe mechanism of formation of pest resistant Bt-cotton plant. | 5 |
| b) Describe mechanism of formation of Roundup Ready Soybean plant.    | 5 |

**OR**

Write short notes on:

- c) Advantages and disadvantages Bt-cotton plant. 2½
- d) Advantages and disadvantages Roundup Ready Soybean plant. 2½
- e) Golden rice. 2½
- f) Moondust carnations. 2½

**4.** Write notes on:

- a) Describe the advantages and limitation of edible vaccine. 5
- b) Describe the biosafety concerns and ethics of plant Biotechnology. 5

**OR**

Write short notes on:

- c) Edible vaccine 2½
- d) Biodegradable plastics 2½
- e) Chloroplast transformation 2½
- f) Advantages and limitation of Biodegradable plastics. 2½

**5.** Write in one or two lines **any ten** (diagram not necessary). **10**

- |                           |                                   |
|---------------------------|-----------------------------------|
| a) Transgenic plant       | b) Direct method of gene transfer |
| c) Silicon carbide fibres | d) Crown gall disease             |
| e) Ti plasmid             | f) Acetosyringone                 |
| g) Cry gene               | h) CP4 EPSPS gene                 |
| i) beta – carotene        | j) Polyhydroxyalkanoates          |
| k) Belmont report         | l) Bioterrorism                   |

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