

M.Sc. (Biotechnology) (NEP Pattern) Semester-III  
**STPG03BTH002 - Paper-II - Plant Bio-technology**

P. Pages : 1

Time : Three Hours



**GUG/S/25/15947**

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw diagram wherever required.

1. Describe in detail composition and preparation of tissue culture media. Write the applications. 16

**OR**

- a) Discuss role of auxins in plant tissue culture as growth hormone. 8  
b) Add a note on maintenance of callus cultures. 8

2. Describe the process of protoplast isolation, culture and isolation for production of hybrid plants. 16

**OR**

- a) Discuss the process of anther cultures for production of hybrid plants. 8  
b) Add a note on establishment of whole plants in soil. 8

3. Describe the methods of biological nuclear transformation. Give the applications. 16

**OR**

- a) Discuss the role of Ti and Ri as vectors. 8  
b) Add a note on basis for tumor formation Give the significance. 8

4. Explain in detail insect resistance with the suitable example of Bt gene. 16

**OR**

- a) Give the applications of plant transformation for productivity and performance. 8  
b) Describe the method for the long shelf life of fruits & flowers. 8

5. Write short notes on.

- a) Conventional plant breeding. 4  
b) Virus free plants. 4  
c) Binary vectors. 4  
d) Pomato as transgenic plant food. 4

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