

Roll No. ....

Total Pages : 2

**MD/M-20**

**18026**

**PLANT CELL CULTURE**

Paper–BTI-602

Time Allowed : 3 Hours]

[Maximum Marks : 65

**Note :** Attempt **five** questions in all, selecting at least **two** questions from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

**Compulsory Question**

1. Comment on the following in brief :

- |                             |   |
|-----------------------------|---|
| (a) Sterilization of Media. | 2 |
| (b) Batch culture.          | 2 |
| (c) Meristem culture.       | 2 |
| (d) Differentiation.        | 2 |
| (e) Organogenesis.          | 2 |
| (f) Cybrids.                | 2 |
| (g) Protoplast fusion.      | 1 |

**UNIT-I**

2. (a) Describe the principles and concept of totipotency. 7
- (b) Mention the development of a Tissue culture industry in India. 6

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3. (a) Discuss the applications and limitations of micropropagation. 7  
(b) Describe the molecular basis of somaclonal variations. 6
4. (a) Describe the method of preparation of a Plant tissue culture medium. 6  
(b) What do you mean by Cryopreservation? Also mention its applications. 7

## UNIT-II

5. (a) Explain the production and importance of Synthetic seeds. 7  
(b) Describe the technique of somatic embryogenesis and its applications. 6
6. (a) Discuss the applications of somatic hybridization in the improvement of Crop plants. 7  
(b) Explain the techniques of haploids production under in *vitro* conditions. 6
7. (a) Describe the methods of protoplast Isolation and Culture. 7  
(b) Discuss methods of assessment of Somatic hybrids. 6