

Roll No. ....

Total Pages : 2

**CMDQ/M-24**

**5634**

## **PLANT TISSUE CULTURE**

Paper–BOT 403

Time Allowed : 3 Hours]

[Maximum Marks : 80

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

### **Compulsory Question**

1. Comment on the followings in brief :  $8 \times 2 = 16$

- (a) Surface sterilization of explants.
- (b) Meristem Culture.
- (c) Types of Culture media.
- (d) Callus.
- (e) Suspension Culture
- (f) Synthetic Seeds.
- (g) Embryo Rescue.
- (h) Organogenesis.

### **UNIT–I**

- 2. (a) Discuss the significance of Protoplast culture. 8
- (b) Explain the techniques of Production of cybrids. 8

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- 3. (a) Describe the principles and concept of Totipotency. 8
- (b) Discuss development of Tissue culture technology in India. 8

### **UNIT–II**

- 4. (a) Describe the method of Cryopreservation and mention its applications. 8
- (b) Describe the production of Triploids through endosperm culture. 8
- 5. Describe the methods of *in vitro* haploid production and its significance. 16

### **UNIT–III**

- 6. (a) Discuss the applications of Somaclonal variations. 8
- (b) Describe the molecular basis of Somaclonal variations. 8
- 7. Describe the applications of Cell culture in secondary metabolites production. 16

### **UNIT–IV**

- 8. Describe the applications of Tissue culture in Agriculture and Forestry. 16
- 9. Describe the technique of Somatic embryogenesis and its applications. 16

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