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# F61

## B. Tech. EXAMINATION, 2020

(Sixth Semester)

(B Scheme)

(Main & Re-appear)

BT

BT302B

Plant Biotechnology

*Time :* 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

**Note** : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

### Unit I

**1.** (a) Discuss briefly the scope of plant biotechnology. **5**

(b) Write an essay on micropropagation and its applications. **5**

(c) Explain, how will you prepare cell suspension ? **5**

**2.** What are secondary metabolites ? Discuss their applications and techniques for *in-vitro* production. Also outline the problems associated with their production. **15**

## Unit II

**3.** What are androgenic haploids ? Discuss their applications and techniques of production. **15**

**4.** Define somaclonal variations. Briefly describe their isolation, basis of selection and applications. **15**

## Unit III

**5.** (a) Discuss different methods of isolation of protoplast. **10**

(b) Describe various tests used for testing viability of protoplasts. **5**

**6.** (a) What is cryopreservation ? Discuss briefly the method of cryopreservation. **10**

(b) What are the difficulties associated with cryopreservation of genetic stock ? **5**

## Unit IV

**7.** (a) What are market genes and why are they so significant ? Explain their types by citing examples. **6**

(b) Give a detailed account of transgenics in crop improvement with emphasis on commercial transgenic crops. **9**

**8.** Write short notes on the following : **5+5+5=15**

(i) Agrobacterium mediated gene transfer

(ii) Edible vaccines

(iii) Transgenic plants as bioreactors.