



Paper ID : 261090

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Subject Code: BBT602

Roll No: _____

BTECH
(SEM. VI) THEORY EXAMINATION 2025-26
PLANT BIOTECHNOLOGY

TIME: 3 HRS

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

M.MARKS: 701. Attempt *all* questions in brief.**SECTION A**

2x7 = 14

Q.N.	Question	CO	Level
(a)	What are cybrids?	3	2
(b)	What is acclimatization in tissue culture?	1	2
(c)	What is slow growth culture?	4	1
(d)	What is cellular differentiation and totipotency?	2	2
(e)	What are marker-free transgenic plants?	6	2
(f)	Define gynogenesis Give suitable examples	3	1
(g)	What is biofortification?	6	2

2. Attempt any *three* of the following:**SECTION B**

7 x 3 = 21

(a)	Critically assess the role of meristem culture in virus elimination.	3	5
(b)	Describe how tissue culture techniques are used for production of secondary metabolites.	4	3
(c)	Discuss the role of plant hormones in regulating tissue culture growth.	1	5
(d)	Analyze the role of Ti plasmid in plant genetic engineering.	6	4
(e)	Discuss somaclonal and germiclonal variations with suitable examples.	2	2

SECTION C3. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Describe the composition of plant tissue culture media. Also discuss different types of media used in plant tissue culture	1	2
(b)	Develop a stepwise procedure for large-scale micropropagation.	1	6

4. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Describe the establishment and maintenance of callus and cell suspension cultures.	2	3
(b)	Compare organogenesis and somatic embryogenesis.	2	4

5. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Develop a workflow for producing somatic hybrids using protoplast fusion.	3	6
(b)	Giving examples evaluate the advantages of micropropagation in agriculture and forestry.	3	5

6. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Evaluate the importance of tissue culture in modern crop improvement programs..	4	5
(b)	Compare cryopreservation and slow growth culture techniques.	5	4

7. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Discuss ethical and environmental concerns related to genetically modified crops.	6	5
(b)	Citing examples illustrate steps involved in genetic modification approaches to improve nutritional quality	6	4