QP Code: R253G062 | Reg. No | | | | | | | | | | | AY 24

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur

(GIET UNIVERSITY)

M.Sc. (Third Semester – Regular) Examinations, December – 2025

24MLSPC23003 – Plant Biotechnology

(Life Science – Plant Science)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is the importance of totipotency and plasticity in plant tissue culture?	CO1	K2
b. How do you establish single cell culture?	CO1	K2
c. What is the difference between stable and transient transfection?	CO4	K2
d. Mention the chemical methods of gene transfer.	CO3	K3
e. Define Biopharming. How are plants used as factories to develop antibodies?	CO3	K3

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. What is tissue culture? How do you establish plant tissue culture in the laboratory?	10	CO3	K3
(OR)			
b. Give a note on micropropagation.	5	CO3	K3
c. Write a note on principle and importance of organogensis.	5	CO3	K3
3.a. Give a note various components of MS media with their role.	5	CO4	K3
b. Write a note on principle and importance of anther culture?	5	CO4	K2
(OR)			
c. Write a note on initiation and sub culturing of callus?	5	CO2	K2
d. Write a note on principle, protocol and importance of suspension culture?	5	CO2	K1
4.a. Discuss the mechanism of agrobacterium mediated gene transfer to plants with reference to co-intigrate vector system	10	CO4	K1
(OR)			
b. Describe in detail about germplasm conservation and cryopreservation	5	CO2	K2
c. Give a note on ‘gene gun’ method of gene transfer.	5	CO4	K1
5.a. What is somatic embryogenesis? Explain the methods and significances of somatic embryogenesis.	10	CO2	K3
(OR)			
b. Write a note seed terminator technology.	5	CO2	K2
c. Give a note on Flavr savr tomato	5	CO2	K2
6.a. What is transgenic plant? Explain the methodology to develop herbicide resistance plants.	5	CO4	K2
(OR)			
b. Describe in detail the principle of Southern hybridization	10	CO1	K2

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