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GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)

M.Sc. (Third Semester - Regular) Examinations, December – 2024

22PSPE304– Plant Biotechnology

(M.Sc.- Life Science(PS))

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Write the importance of totipotency and plasticity in plant tissue culture.	CO1	K2
b. Mention the growth regulators that play vital role in plant tissue culture.	CO1	K2
c. Explain why meristem is considered as good explants material?.	CO2	K3
d. Explain the significances of suspension culture.	CO2	K3
e. Write the steps to prepare explants for cell culture.	CO2	K2
f. Differentiate between hybridization and cybridization.	CO3	K2
g. Mention the natural vector used in plant gene transfer with significance.	CO3	K3
h. Write the principle $CaCl_2$ precipitation method of gene transfer.	CO3	K2
i. Name the organism from which transgene is derived to create Golden rice.	CO4	K3
j. Define Biopharming. How are plants used as factories to develop antibodies?	CO4	K4

PART – B **(10 x 5 = 50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO #	Blooms Level
2. How do you establish plant tissue culture in the laboratory? Add note on applications of plant tissue culture.	8+2	CO1	K3
3.a. Give a note composition of MS media with their role.	5	CO1	K2
b. Describe somatic embryogenesis with significance.	5	CO2	K2
4. What is somatic hybrid? Explain the principle and process of somatic hybridization.	2+8	CO2	K3
5.a. Give an account on methods of production of artificial seeds along with its importance.	5	CO2	K3
b. Give a note on particle bombardment method of gene transfer.	5	CO3	K2
6. Discuss the mechanism of agrobacterium mediated gene transfer to plants with reference to binary vector system.	10	CO3	K3
7.a. Write a note seed terminator technology.	5	CO4	K3
b. Write a note on antisense technology for extending the shelf life of fruits by targeting ACC synthase / polygalactoronase gene.	5	CO4	K3
8. What is transgenic plant? Explain the methodology to develop the insect resistance plants with reference to Bt cotton.	2+8	CO4	K4