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GIET UNIVERSITY, GUNUPUR – 765022
M. Sc. (Third Semester) Examinations, December – 2022
20PSPE304 - Plant Biotechnology
(Life science – Plant Science)

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. What is the difference between totipotency and plasticity?	CO1	2
b. Mention the requirements of plant tissue culture.	CO1	2
c. How do you sterilize explants?	CO2	2
d. What are the significances of artificial seeds?	CO2	3
e. How do you develop somatic hybrids?	CO2	3
f. Define transgenesis.	CO3	2
g. Agrobacterium is a natural plant engineer. Justify the statement. .	CO3	4
h. What is the principle of electroporation?	CO3	3
i. Name the organisms which are sources of transgene in golden rice.	CO4	4
j. Define Biopharming. How are plants used as factories to develop antibodies?	CO4	5

PART – B**(10 x 5 = 50 Marks)**Answer **ANY FIVE** questions

	Marks	CO#	Blooms Level
2. What is tissue culture? Describe the principle of establishment of plant tissue culture with applications.	2+8	CO1	2
3.a. Give a note various components used in plant tissue culture media with their role.	5	CO1	2
b. Write a note on initiation and sub culturing of callus?	5	CO2	3
4. a. Write a note on principle, protocol and importance of suspension culture?	5	CO2	3
b. Give an account on methods of production of artificial seeds along with its importance.	5	CO2	3
5. What is somatic embryogenesis? Explain the methods and significances of somatic embryogenesis.	10	CO2	4
6. Discuss the mechanism of agrobacterium mediated gene transfer to plants with reference to binary vector system	10	CO3	4
7.a. Give a note on 'gene gun' method of gene transfer.	5	CO3	3
b. Write a note on antisense technology for extending the shelf life of fruits by targeting ACC synthase / polygalacturonase gene.	5	CO4	5
8. What is transgenic plant? Explain the methodology to develop the insect resistance plants with reference to Bt cotton.	2+8	CO4	5

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