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**Gandhi Institute of Engineering and Technology University, Odisha, Gunupur**  
**(GIET University)**



B. Tech (Sixth Semester - Regular) Examinations, April 2025

**22BBTPC36001 – Plant Biotechnology**

(Biotechnology)

Time: 3 hrs

Maximum: 70 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 a synthetic medium?	CO1	K1
b. Sketch electrofusion.	CO2	K1
c. State indirect embryogenesis.	CO2	K1
d. Explain gene silencing.	CO3	K1
e. What are elicitors?	CO4	K1

**PART – B**

**(15 x 4 = 60 Marks)**

Answer **ALL** the questions

	Marks	CO #	Blooms Level
2. a. Give an account of sterilization techniques used in plant tissue culture.	8	CO1	K1
b. How plant cell suspension culture is developed at the laboratory?	7	CO1	K2
(OR)			
c. Write details on immature embryo culture and its significant.	8	CO1	K3
d. Describe with examples of plasticity nature of plant cell.	7	CO1	K2
3.a. Write on <i>in vitro</i> organogenesis in plant.	8	CO2	K3
b. Demonstrate somatic embryogenesis.	7	CO2	K2
(OR)			
c. Execute the process of artificial seed preparation and its limitation.	8	CO2	K2
d. Give an account of disease resistance genes from higher plants used for plant transformation.	7	CO2	K4
4.a. Discuss on concept of genetic transformation using <i>Agrobacterium</i> vector.	8	CO3	K4
b. Explain on gene gun systems and its advantageous.	7	CO3	K3
(OR)			
c. Apprise on three virus vector-based gene transform to plant.	8	CO3	K2
d. Describe on four important reporter genes used in transformation process.	7	CO3	K1
5.a. How golden rice is created by transforming rice plant?	8	CO4	K3
b. Give an account of plant alkaloids and its importance.	7	CO4	K4
(OR)			
c. Describe basic strategies for secondary metabolite production.	8	CO4	K2
d. What are the specialized strategies used for the production of secondary metabolites?	7	CO4	K3

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