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

M.Sc. (First Semester - Regular) Examinations, January – 2026

24MBIPC11003 – Plant and Animal Biotechnology of Biotechnology

(Biotechnology)

Time: 3 hrs | Maximum: 60 Marks

(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. Define micropropagation.	CO1	K1
b. What are opines?	CO2	K3
c. . Write on a recombinant vaccine.	CO3	K2
d. Explain functional genomics.	CO5	K3
e. What is gene mapping?	CO6	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Describe androgenesis and its applications in genetics.	5	CO1	K2
b. Elucidate protoplast isolation and culture techniques.	5	CO3	K3
(OR)			
c. Describe the steps involved in primary culture of mammalian cells.	5	CO2	K3
d. Discuss the five applications of animal cell culture technology.	5	CO4	K2
3.a. Describe particle bombardment as a method of direct gene transfer.	5	CO1	K1
b. Explain chloroplast transformation and its advantages.	5	CO5	K4
(OR)			
c. Write a short note on cis genesis and intra genesis.	5	CO6	K3
d. Describe the concept of molecular pharming.	5	CO1	K2
4.a. Describe the procedure of artificial insemination in farm animals.	5	CO2	K1
b. Discuss the principle and steps involved in cryopreservation of sperms in livestock.	5	CO3	K3
(OR)			
c. Describe the methods used for producing transgenic animals.	5	CO4	K4
d. . Explain the recombinant approaches to vaccine production.	5	CO1	K1
5.a. Define genomics and explain its classification.	5	CO2	K3
b. Describe metabolomics and its role in functional genomics.	5	CO5	K4
(OR)			
c. Differentiate between forward genetics and reverse genetics.	5	CO4	K2
d. Write a short note on genome sequencing projects and their applications.	5	CO6	K3
6.a. Describe RAPD markers, including their advantages and limitations.	5	CO5	K2
b. Discuss the principles and strategies of marker-assisted selection (MAS).	5	CO4	K1
(OR)			
c. Discuss the role of PCR-based techniques in pathogen detection.	5	CO2	K4
d. Explain the methods of detection of meat adulteration using DNA-based techniques.	5	CO6	K5

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