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

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

22BTPC301 – Bioprocess Engineering and Technology

(M.Sc. Biotechnology)

Time: 3 hrs | Maximum: 70 Marks

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

PART – A **(2 x 10 = 20 Marks)**

SET-A

Q.1. Answer ***ALL*** questions

		CO #	Blooms Level
a.	What is the necessity of water recycling in fermentation process?	CO4	K2
b.	What do you mean by flocculation?	CO4	K2
c.	Name two process of food preservation?	CO4	K3
d.	Differentiate between batch and continuous culture?	CO4	K3
e.	What is strain improvement?	CO1	K2
f.	Name two substrates in bioreactor?	CO4	K2
g.	What do you mean by chemostat and turbidostat?	CO3	K2
h.	What do you mean by diauxy growth? Give with examples?	CO3	K2
i.	Differentiate between upstream and downstream processing?	CO3	K3
j.	Name two techniques used in the maintenance of industrially important microbes?	CO1	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ANY FIVE*** questions

		Marks	CO #	Blooms Level
2. a.	Discuss about the cheese making process by proteases and various other enzyme in food processing.	5	CO4	K3
b.	Explain about fermentation as a method of preparing and preserving foods.	5	CO4	K3
3.a.	Write notes on ultra and micro filtration technique.	5	CO4	K2
b.	Discuss about the role of bacteriocins from lactic acid bacteria, its production and applications in food preservation.	5	CO4	K3
4. a.	Discuss about the role of microbes in pickling, producing colours, flavours, and alcoholic beverages.	5	CO4	K3
b.	Explain about microbial growth and its kinetics.	5	CO1	K3
5.a.	Discuss about isolation, screening and maintenance of industrially important microbes.	5	CO1	K3
b.	Discuss about mechanism of strain improvement for increased yield of	5	CO1	K3

	products.			
6. a.	Write notes on continuous fermentation.	5	CO3	K2
b.	Write notes on centrifugation techniques.	5	CO4	K2
7.a.	Explain how different parameters are measuring and controlling in bioprocess technology.	5	CO3	K3
b.	Write notes on fermentation economics.	5	CO3	K2
8. a.	Discuss any two process of cell immobilization and its application.	5	CO3	K3
b.	Explain about effluent treatment and its disposal.	5	CO5	K3