

Reg.No.: 

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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 90021**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Third Semester

Biotechnology

U19BT304 - INDUSTRIAL BIOTECHNOLOGICAL PRODUCTS

(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Define Fermentation.	2	K1	CO1
2.	How Pasteur demonstrated the use of yeast in fermentation process.	2	K1	CO1
3.	What are primary metabolites?	2	K1	CO2
4.	Mention the different production methods of acetic acid.	2	K1	CO2
5.	Draw the structure of $\beta$ -lactam ring.	2	K1	CO3
6.	What is bacitracin?	2	K1	CO3
7.	Compare the advantages of nisin over other bio preservatives.	2	K2	CO4
8.	What are the advantages of SCPs?	2	K1	CO4
9.	Why plant organ cultures are preferred over suspension cultures for secondary metabolite production?	2	K2	CO5
10.	Explain how a Mammalian cell fits to be as recombinant protein expression system.	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain the various unit operations involved in integrated Bioprocess industry.	13	K2	CO1
	(OR)			
b)	Write a detailed note on Flow Charts & Block diagram used in Process industry.	13	K2	CO1
12. a)	Give an account on the industrial production of citric acid and its importance.	13	K2	CO2
	(OR)			
b)	Illustrate the production process of Ethyl alcohol.	13	K2	CO2
13. a)	Describe the steps involved in the production of erythromycin. Write down the applications of erythromycin.	13	K2	CO3
	(OR)			
b)	Explain in detail the methods of production of Penicillin. List out the application of Penicillin.	13	K2	CO3
14. a)	Explore the methods used for the production of Xanthan gum.	13	K3	CO4
	(OR)			
b)	Explain in detail about the steps involved in beer production.	13	K3	CO4
15. a)	Explain in detail about the bioprocess involved strategies in animal tissue culture.	13	K3	CO5
	(OR)			
b)	Explain the production process and applications of Monoclonal Antibodies.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	Describe the production of alcohol/organic acid from agricultural waste.	15	KL4	CO2
	(OR)			
b)	Analyze how rDNA has helped in development of therapeutic compounds with human growth hormone as an example.	15	KL4	CO5