QP Code: RN22BTECH287 | Reg. No | | | | | | | | | | | AR 22

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

B. Tech (Fifth Semester - Regular) Examinations, November – 2024

22BBTPE55011 – Industrial Microbiology and Enzyme Technology

(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)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** questions		
a.	Give examples of products produced through solid and semi solid fermentation.	CO1	K1
b.	Write the function of vaccine.	CO2	K1
c.	Explain the role of minerals in fermentation media.	CO3	K1
d.	How enzymes are stabilized?	CO4	K1
e.	Define stock culture and inoculum.	CO3	K1

PART – B **(15 x 4 = 60 Marks)**

		Marks	CO #	Blooms Level
	Answer ***All*** the questions			
2. a.	Explain the process of large-scale production by semi-solid fermentation.	8	CO1	K2
b.	Draw a labelled diagram of fermenter and describe its parts.	7	CO1	K2
	(OR)			
c.	Explain in brief about continuous fermentation and its kinetics.	8	CO1	K2
d.	Discuss about important factors of solid state fermentation.	7	CO1	K2
3.a.	Demonstrate the microbial production of proteases with a flow diagram.	8	CO2	K3
b.	What is the main role of microorganism in fermentation? Explain about the improvement of a strain for the fermentation process?	7	CO2	K2
	(OR)			
c.	Discuss the production and application of recombinant protein insulin.	8	CO2	K3
d.	Discuss about Hepatitis-B vaccine production	7	CO2	K2
4.a.	Enlist approaches for media optimization and explain any three methods.	8	CO3	K2
b.	Explain the working methods for establishing and maintaining a culture.	7	CO3	K3
	(OR)			
c.	Explain the role of rDNA technology in strain improvement.	7	CO3	K2
d.	Discuss about the improvement of strain through induced mutation.	8	CO3	K2
5.a.	Discuss in brief about the strategies for enzyme stabilization.	8	CO4	K3
b.	Discuss about the factors that affect enzyme stability.	7	CO4	K2
	(OR)			
c.	Discuss about classification of biocatalyst and give suitable examples.	8	CO4	K2
d.	Illustrate the effect of chemical modification on enzyme stability.	7	CO4	K2

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