LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION

PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

SIXTH SEMESTER – **APRIL 2025**

UPB 6502 – MICROBIAL TECHNOLOGY

Date: 08-05-2025 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 PM

	SECTION A - K1 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
1.	**Fill in the blanks**	
a)	Stationary phase is also called as _____.	
b)	Function of spargers in the fermentor is _____.	
c)	Proteins obtained from fungi are called as _____.	
d)	Penicillin is found by _____.	
e)	The substrate for amylase production is_____.	
2.	**State whether the following statements are TRUE or FALSE**	
a)	Modifying industrial strain is called strain improvement.	
b)	Fermentor and bioreactor are the same.	
c)	Malt is the substrate for beer.	
d)	Cortisone is a sterol.	
e)	*Azospirillum* is a biofuel producing organism.	
	SECTION A - K2 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
3.	**Choose the correct answer**	
a)	Which of the following is a preservation technique? a) Moisture chamber b) Serial dilution c) Baiting d) lyophilisation	
b)	What is the agent used for arresting foam in the fermentor? a) Activated charcoal b) Sulphite waste liquor c) Mineral oil d) Agar Agar	
c)	Find out the mycoprotein from the following a) *Spirullina* b) Yoghurt c) Idly batter d) *Fusarium*	
d)	YAC is used in the production of a) Hep B vaccine b) Insulin c) yoghurt d) glutamic acid	
e)	Citric acid is produced using a) *Lactobacillus bulgaris* b) *Methylomonas clara* c) *Aspergillus niger* d) *Pseudomonas aeruginosa*	
4.	**Answer the following, each in about 50 words**	
a)	Recall the importance of biomass production.	
b)	List the types of fermentors.	
c)	Expand the term SCP. List its importance.	
d)	Mention the microbial sources of Streptomycin.	
e)	Recall the uses of cellulases.	
	SECTION B - K3 (CO2)	
	Answer any TWO of the following in 500 words **Draw diagrams / flowcharts wherever necessary**	**(2 x 10 = 20)**
5.	Explain various methods involved in improvement of industrially important microorganisms	

6.	Describe the steps and methods used in recovery of products.
7.	Write a note on traditional fermented foods with classic examples.
8.	Comment on biofertilizers and their importance with examples.
SECTION C – K4 (CO3)	
	Answer any TWO of the following in 500 words (2 x 10 = 20) **Draw diagrams / flowcharts wherever necessary**
9.	Explain the production of various metabolites and its relationship with the microbial growth curve
10.	Summarize the production of SCP using *Spirulina*.
11.	Describe the industrial production of Acetic acid
12.	Explain general steps in yoghurt production.
SECTION D – K5 (CO4)	
	Answer any ONE of the following in 1000 words (1 x 20 = 20) **Draw diagrams / flowcharts wherever necessary**
13.	Elucidate the structure and components of a fermentor.
14.	Enumerate the industrial techniques involved in the production of penicillin and streptomycin.
SECTION E – K6 (CO5)	
	Answer any ONE of the following in 1000 words (1 x 20 = 20) **Draw diagrams / flowcharts wherever necessary**
15.	Elaborate the method of cheese production and list out the different types of cheese.
16.	Discuss the production of recombinant drug and vaccine.

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