LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

U.G. DEGREE EXAMINATION – **ALLIED**

THIRD SEMESTER – **NOVEMBER 2024**

UPB 3401 – APPLIED MICROBIOLOGY

Date: 15-11-2024 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)	Protists are nothing but unicellular with ---------- condition.	
b)	Flagella arranged all over the cell surface is called as ……	
c)	The function of a sparger in a fermenter is ----------..	
d)	Amylase is produced industrially in large scale by the bacteria ---------- ----------.	
e)	Biosensors normally attached with the ----------, the product will be detected.	
2.	**State whether the following statements are TRUE or FALSE**	
a)	Bacteria that grow normally in elevated temperatures are called as thermophiles.	
b)	Muller Hinton Agar is used as a differential medium.	
c)	In transformation, the donor DNA is derived from another living bacteria.	
d)	Citric acid is produced industrially by *Aspergillus*.	
e)	Super bug is nothing but oil eating bacteria known as *Psuedomonas.*	
	SECTION A - K2 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
3.	**Choose the correct answer**	
a)	In bacteria, ribosomes are ------ types. i. 70 S ii. 80 S iii. 60 S iv. 40 S	
b)	The generation time of bacteria is normally ------.. i. 12 hrs ii. 2 days iii. 7 days iv. 2 – 4 weeks.	
c)	Plasmids are ds DNA closed circles codes for characters except ----------. i. Fertility ii. Resistance to antibiotic iii. Degradation iv. Metabolic pathway	
d)	The microbe used in the wine production is: i. *Saccharomyces* ii. *Lactobacillus* iii. *Zymomonas* iv. *Candida*	
e)	Activated sludge digester contains a lot of ------ microbes. i. Aerobes ii. Anaerobes iii. Facultative anaerobes iv. Microaerobes	
4.	**Answer the following, each in about 50 words**	
a)	Compare nucleoid and plasmid.	
b)	Mention the stages of normal growth curve.	
c)	Write note on pure culture technique.	
d)	Give the basic reaction of amylase activity.	
e)	What are biopesticides?	
	SECTION B - K3 (CO2)	
	Answer any TWO of the following in 500 words **Draw diagrams / flowcharts wherever necessary**	**(2 x 10 = 20)**
5.	Explain Whittaker's five kingdom classification with detailed characteristic features of each kingdom.	
6.	Write short notes on the gene regulation mechanism by *lac* operon model	

7.	Chart out the industrial production of citric acid by microbes.
8.	Outline the types and applications of nitrogenous biofertilizers.
	SECTION C – K4 (CO3)
	Answer any TWO of the following in 500 words **(2 x 10 = 20)** **Draw diagrams / flowcharts wherever necessary**
9.	State the classification of viruses according to Baltimore.
10.	Illustrate and explain the mechanism of bacterial transformation.
11.	Explain the lytic cycle of viral replication along with its significance
12.	Briefly explain the down streaming process in industries.
	SECTION D – K5 (CO4)
	Answer any ONE of the following in 1000 words **(1 x 20 = 20)** **Draw diagrams / flowcharts wherever necessary**
13.	Illustrate the ultrastructure of bacteria. Explain the structure and function of its cellular components.
14.	Describe the parts of a fermenter, highlighting their functions.
	SECTION E – K6 (CO5)
	Answer any ONE of the following in 1000 words **(1 x 20 = 20)** **Draw diagrams / flowcharts wherever necessary**
15.	Write a detailed account on the wine production.
16.	Present a detailed account on the industrial production of Penicillin.

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