LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

THIRD SEMESTER – **APRIL 2024**

UPB 3502 – MICROBIOLOGY

Date:17-04-2024 Dept. No. Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

Draw diagrams / flowcharts wherever necessary.

	SECTION A - K1 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
1.	**Fill in the blanks**	
a)	Father of Microbiology is ----------.	
b)	_____ microbes utilize carbon from carbon dioxide.	
c)	Example of anabolism in eukayote is _____.	
d)	Prophage formation takes place during _____.	
e)	---------- Viruses has complex symmetry.	
2.	**True or False**	
a)	Smallest size of bacteria is *Vibrio.*	
b)	A bacterial cell reproduces by fission.	
c)	Microbial enzymes are known to play a crucial role as metabolic catalysts.	
d)	Chromosomal DNA is associated with proteins in bacteria.	
e)	Viruses are obligate parasites with protein coat.	
	SECTION A - K2 (CO1)	
	Answer ALL the Questions	**(10 x 1 = 10)**
3.	**Choose the correct answer**	
a)	Which one of the following belongs to archebacteria? i) *Methanococcus* ii) *Rhizobium* iii) *Vibrio* iv) *Bacillus*	
b)	Bacterial chlorophyll is present in i) Green sulphur bacteria ii) Lactic acid bacteria iii) Purple bacteria iv) Acetic acid bacteria	
c)	In bacteria, respiratory enzymes are located in i) Cytoplasmic membrane ii) Cell wall iii) DNA iv) Ribosomes	
d)	Plasmids that can integrate into bacterial DNA are called i) Mesosomes ii) Episomes iii) Ribosome iv) Chromosomes	
e)	Common cold is caused by i) Rabis virus ii) Rhino virus iii) Influenza virus iv) Polio virus	
4.	**Answer the following ,each in about 50 words**	
a)	Define negative staining.	
b)	Write a note on axenic culture.	
c)	List the properties of enzymes.	
d)	Name the genes of *lac* operon model.	
e)	Mention the salient features of TMV.	

SECTION B - K3 (CO2)	
Answer any TWO of the following each in about 500 words.	**(2 x 10 = 20)**
5.	Describe the scope of microbiology.
6.	Explain the ultrastructure and arrangement of bacterial cell.
7.	Write notes on the microbial enzymes and their application.
8.	Elaborate on the cultivation of viruses.
SECTION C – K4 (CO3)	
Answer any TWO of the following each in about 500 words.	**(2 x 10 = 20)**
9.	Explain Corl Woes's six kingdom classification.
10.	Describe the mode of nutrition in bacteria.
11.	Differentiate between anabolism with catabolism with suitable examples.
12.	Explain the electron microscopic structure of a bacteriophage.
SECTION D – K5 (CO4)	
Answer any ONE of the following in about 1000 words.	**(1 x 20 = 20)**
13.	Write a brief note on Gram staining procedure
14.	Describe the quantitative measurement of bacterial growth
SECTION E – K6 (CO5)	
Answer any ONE of the following in about 1000 words.	**(1 x 20 = 20)**
15.	Describe in detail about anaerobic and aerobic respiration
16.	Write a short note on viruses and David Baltimore's classification of virus.

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