LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

THIRD SEMESTER – **NOVEMBER 2022**

UPB 3502 – MICROBIOLOGY

Date: 03-12-2022 Dept. No. Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

	SECTION A		
Answer ALL the Questions			**20 marks**
1.	**Choose the correct answer**		**(5 x 1 = 5)**
a)	Negative staining is applicable to i) Capsule ii) Flagella iii) Endospore iv) Mycolic acid	K1	CO1
b)	Cryopreservation of microbes in liquid nitrogen is done at a temperature i) -20 ˚C ii) -80 ˚C iii) -120 ˚C iv) -220 ˚C	K1	CO1
c)	RuBP carboxylase in bacteria is located at i) Cytoplasm ii) Grana iii) Thylakoids iv) Plasma membrane	K1	CO1
d)	Which one of the following is not related to plasmid? i) dsDNA ii) No histones iii) Special characters iv) House keeping genes	K1	CO1
e)	Infective entity is nothing but i) Virus ii) virion iii) Viroid iv) vaccine	K1	CO1
2.	**Complete the following sentences**		**(5 x 1 = 5)**
a)	Antiseptic chemical was discovered by the scientist -----.	K1	CO1
b)	Yeast Mannitol Agar medium is an example for ------- type of medium.	K1	CO1
c)	The source of electron in anoxygenic photosynthesis requires -----.	K1	CO1
d)	Aerobic respiration in prokaryotes takes place at --------.	K1	CO1
e)	The name of vaccine production unit at Guindy, Chennai is -------.	K1	CO1
3.	**Answer the following, each within 50 words**		**(5 x 2 = 10)**
a)	Comment on the contributions of Louis Pasture.	K2	CO1
b)	Mention the stages of normal growth curve.	K2	CO1
c)	Give the applications of amylase.	K2	CO1
d)	Write note on merozygotes.	K2	CO1
e)	Cite plaque formation in virus.	K2	CO1
	SECTION B		
Answer any TWO of the following, each within 500 words. Draw diagrams / flowchart wherever necessary.			**(2 x 10 = 20 marks)**
4.	Discuss Carl Woese's 6 kingdom classification.	K3	CO2

5.	Describe the types of microbes based on its nutritional requirements.	K3	CO2
6.	Elaborate on the biochemical reactions from glycolysis to ethanol formation.	K3	CO2
7.	Explain the electron microscopic structure of a bacteriophage.	K3	CO2
	SECTION C		
Answer any TWO of the following, each within 500 words. Draw diagrams / flowchart wherever necessary. (2 x 10 = 20 marks)			
8.	Chart out the procedure for differential staining with reference to Gram staining method.	K4	CO3
9.	Write short notes on the pure culture methods followed for bacteria.	K4	CO3
10.	Narrate the mechanism of bacterial transformation. List out its applications.	K4	CO3
11.	Enumerate the salient features of plant viruses you have studied.	K4	CO3
	SECTION D		
Answer any ONE of the following, within 1000 words. Draw diagrams / flowchart wherever necessary. (1 x 20 = 20 marks)			
12.	Correlate the major divisions of bacterial classification according to Bergy's Manual of Systematic Bacteriology.	K5	CO4
13.	Describe the ultrastructure of a prokaryotic cell.	K5	CO4
	SECTION E		
Answer any ONE of the following, within 1000 words. Draw diagrams / flowchart wherever necessary. (1 x 20 = 20 marks)			
14.	Describe in detail about the types of bacterial conjugation.	K6	CO5
15.	Summarize the details on the viruses classification according to Baltimore's systematic classification.	K6	CO5

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