

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**THIRD SEMESTER – **APRIL 2023****UPB 3502 – MICROBIOLOGY**

Date: 04-05-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

SECTION A**Answer ALL the Questions****20 marks****1. Choose the correct answer****(5 x 1 = 5)**

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|----|--|----|-----|
| a) | Acid fast staining is used for the identification of
i) <i>Diplococcus</i> ii) <i>Vibrio</i> iii) <i>Clostridium</i> iv) <i>Mycobacterium</i> | K1 | CO1 |
| b) | Photolithotrophic bacteria utilizes electron source from
i) H ₂ O ii) H ₂ S iii) CO ₂ iv) Glucose | K1 | CO1 |
| c) | Amphibolic reaction is referred to
i) Glycolysis ii) Calvin cycle iii) Kreb's cycle iv) Photophosphorylation | K1 | CO1 |
| d) | Which one of the following is called the merozygote?
i) F ⁺ ii) F ⁻ iii) Hfr iv) F' | K1 | CO1 |
| e) | Common cold is caused by the virus
i) Rhinovirus ii) Covid19 iii) Influenza iv) Rhabdovirus | K1 | CO1 |

2. Complete the following sentences**(5 x 1 = 5)**

- | | | | |
|----|---|----|-----|
| a) | Pure culture technique was first introduced by the scientist -----. | K1 | CO1 |
| b) | Muller Hinton agar is an example for ----- type of medium. | K1 | CO1 |
| c) | In photosynthesis CO ₂ is accepted by the enzyme -----. | K1 | CO1 |
| d) | β - Galactosidase enzyme is activated by the sugar molecule -----. | K1 | CO1 |
| e) | Simple, less cost, without any contamination of virus cultivation is done by the method of -----. | K1 | CO1 |

3. Answer the following, each within 50 words**(5 x 2 = 10)**

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|----|--|----|-----|
| a) | Compare eubacteria and archaeobacteria. | K2 | CO1 |
| b) | Mention the features of pleomorphic bacteria. | K2 | CO1 |
| c) | List out the pigments of microbial photosynthesis. | K2 | CO1 |
| d) | Comment on the prophages. | K2 | CO1 |
| e) | Cite the applications of bacteriophages. | 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.	Explain the special types of staining techniques.	K3	CO2
5.	Describe the types of microbes based on its physical conditions' requirements.	K3	CO2
6.	Elaborate on the biochemical reactions of anaerobic respiration.	K3	CO2
7.	Outline the types of vaccines available against viral diseases.	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 details on six kingdom classification by Carl Woese.	K4	CO3
9.	Write short notes on the microbial preservation methods.	K4	CO3
10.	Narrate the experimental evidences for transformation and conjugation.	K4	CO3
11.	Substantiate on the different methods of virus cultivation.	K4	CO3

SECTION D

Answer any ONE of the following, within 1000 words. Draw diagrams / flowchart wherever necessary. (1 x 20 = 20 marks)

12.	Compile the methods involved to determine microbial growth.	K5	CO4
13.	Evaluate the microbial enzymes on the basis of production and applications.	K5	CO4

SECTION E

Answer any ONE of the following, within 1000 words. Draw diagrams / flowchart wherever necessary. (1 x 20 = 20 marks)

14.	Construct the events of generalized and specialized transduction.	K6	CO5
15.	Summarize the details on the bacterial photosynthesis.	K6	CO5

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