

BACHELOR OF SCIENCE (CBCS - 2016 COURSE)
F. Y. B. Sc. Sem-II :SUMMER- 2022
SUBJECT : MICROBIOLOGY : MICROBIAL NUTRITION, GROWTH &
CONTROL

Day : Monday
Date : 4/7/2022

S-14768-2022

Time : 11:00 AM-02:00 PM
Max. Marks : 60

N. B.

- 1) All Questions are **COMPULSORY**.
- 2) Draw neat labelled diagrams **WHEREVER** necessary.
- 3) Figures to the right indicate **FULL** marks.

Q.1 A) Select a proper alternative from the following & complete the sentence : **(06)**

i) _____ does not show oligodynamic action on growth of microorganisms.

- | | |
|----------------------|----------------------|
| a) HgCl ₂ | b) NaCl |
| c) CuSO ₄ | d) AgNO ₃ |

ii) _____ organisms require low pH range.

- | | |
|-----------------|-----------------|
| a) Acidophilic | b) Alkalophilic |
| c) Neutrophilic | d) Halophilic |

iii) Spoilage of raw milk can be prevented by the process of _____.

- | | |
|--------------------|-------------------|
| a) Antisepsis | b) Disinfection |
| c) Pasterurization | d) Tyndallization |

iv) The nutrients that are required by organisms in large amounts are called as _____.

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|----------------------|---------------------|
| a) Micronutrients | b) Macronutrients |
| c) Complex nutrients | d) Simple nutrients |

v) _____ antibiotic affects protein synthesis.

- | | |
|-----------------|---------------|
| a) Streptomycin | b) Penicillin |
| c) Rifampin | d) Ampicillin |

vi) _____ is the relationship where one population receives benefit from the relationship while the other receives neither benefit nor harm.

- | | |
|---------------|-----------------|
| a) Synergism | b) Commensalism |
| c) Parasitism | d) Mutualism |

B) Attempt all of the following : **(06)**

- i) What is generation time?
- ii) What are extremophiles?
- iii) What is meant by bactericidal agent?
- iv) Define disinfectants.
- v) Define selective medium
- vi) What are obligate anaerobes?

P.T.O.

Q. 2 Attempt **Any THREE** of the following : (12)

- a) What are different indirect methods used for enumeration of bacteria.
- b) Explain the principle and working of autoclave.
- c) Describe the growth cycle of organisms.
- d) Discuss bacterial cell division.

Q. 3 Attempt **Any FOUR** of the following : (12)

- a) What is chemostat? Give its significance in studying the growth pattern.
- b) Write a note on Cryopreservation.
- c) Discuss the role of any three chemical disinfecting agents.
- d) Give the importance of water, salt and buffer in synthetic media.
- e) Define pH, Classify the organisms based on the requirement of pH.

Q. 4 Attempt **Any TWO** of the following : (12)

- a) Give classification of organisms based on their optimum growth temperature.
- b) Explain the various types of selective media with suitable examples.
- c) Describe various physical methods used for disinfection.

Q. 5 Attempt **Any TWO** of the following : (12)

- a) Describe various media components used as a source of Nitrogen, Carbon and Phosphorus.
- b) Describe the methods used for cultivation of anaerobic bacteria.
- c) Explain the mechanism of resistance to antibiotics in organisms.

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