

B.Sc. Semester - 2 (NEP-2020) Examination

MARCH/APRIL-2026

MIC: Microbial Physiology -1 (Major-3)

Time: 2:00 Hours

Marks:50

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que.1 1) Summarize the classification of lipids and discuss their biological significance. (05)
2) Compare the structures of different types of RNA and explain their roles in biological processes. (05)

OR

- Que.1 1) Classify carbohydrates and explain their major types with examples. (05)
2) Illustrate the structure of DNA and explain its role in genetic information storage. (05)
Que.2 1) Define enzymes and explain their importance in biological systems. (05)
2) Classify enzymes according to the standard enzyme classification system with suitable examples. (05)

OR

- Que.2 1) Explain the chemical properties of enzymes and discuss their significance in catalysis. (05)
2) Explain the mechanism of enzyme inhibition with a suitable example. (05)
Que.3 1) Analyze the role of high and low temperatures as physical methods of microbial control. (05)
2) Explain the characteristics of an ideal antimicrobial agent. (05)

OR

- Que.3 1) Describe bactericidal agents and illustrate their action with suitable examples. (05)
2) Describe bacteriostatic agents and provide appropriate examples. (05)
Que.4 1) Define and differentiate between sterilization, disinfectants, and antiseptics. (05)
2) Explain the use of alcohols and halogens in microbial control. (05)

OR

- Que.4 1) Explain the principle of the Phenol Coefficient method. (05)
2) Describe the mechanism of action of radiation in the control of microbial growth. (05)
Que.5 1) Explain the different levels of protein structure and relate them to protein function. (05)
2) Analyze the significance of the difference between competitive and non-competitive enzyme inhibition in cellular metabolism. (05)

OR

- Que.5 1) Explain the fundamental principles of microbial control and summarize the different methods used for controlling microorganisms. (05)
2) Explain the mode of action of phenol and phenolic compounds as chemical antimicrobial agents. (05)
