

B.Sc. Semester - 2 (NEP-2020) Examination**JUNE – 2024****MIC: Microbial Physiology -2 (Major-4)****Time: 2:00 Hours****Marks: 50****Instructions:**

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

-
- Que:1 (1) Describe the composition of an atom and its elemental constituents. (05)
(2) Describe the types of chemical bonds commonly found in molecules. (05)
OR
- Que:1 (1) Discuss the properties of water that make it essential for life. (05)
(2) Explain the relevance of biochemistry in microbiology. (05)
- Que:2 (1) Explain how microbial growth is influenced by nutrition and energy sources. (05)
(2) Differentiate between autotrophic and heterotrophic modes of nutrition. (05)
OR
- Que:2 (1) Describe chemolithoautotrophy and chemolithoheterotroph with example. (05)
(2) Explain the concepts of photolithoautotroph and photoorganoheterotroph. (05)
- Que:3 (1) Explain fluid mosaic model of cell membrane. (05)
(2) Differentiate between symport and antiport mechanisms. (05)
OR
- Que:3 (1) Briefly explain the function of the sodium-potassium pump and the proton pump. (05)
(2) Explain the difference between passive and facilitated diffusion. (05)
- Que:4 (1) Explain the potential consequences of the nonmedical use of antibiotics. (05)
(2) Explain the significance of chemotherapeutic agents in treating diseases. (05)
OR
- Que:4 (1) Explain the purpose of microbiological assays for antibiotics. (05)
(2) Describe modes of action to inhibition of cell wall synthesis by antibiotics. (05)
- Que:5 (1) Define pH and explain its importance in biological systems. (05)
(2) Define autotroph and phototroph with example. (05)
OR
- Que:5 (1) Discuss how iron uptake occurs in microorganisms. (05)
(2) Define antifungal, antiviral, and antitumor agents. (05)
