

B.Sc. Semester - 4 (CBCS) Examination
July-2025 [OLD COURSE]
MICRO-BIOLOGY(CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

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

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- Que.1(A) Answer the following (Any one out of two) (07)
1. Elaborate on the role and types of bio fertilizers in sustainable agriculture.
 2. Explain the various types of interactions among soil microorganisms, providing suitable examples for each.
- Que.1(B) Attempt any one (Out of two) (04)
1. Describe the physical and chemical characteristics of soil in brief.
 2. Discuss the significance of Winogradsky's column in the study of microbial ecosystems.
- Que.1(C) Attempt any three (Out of five) (03)
1. Define Rhizosphere.
 2. Name any plant diseases caused by bacteria.
 3. What is the primary role of microorganisms in biogeochemical cycles?
 4. True or False: Nitrogen fixation is exclusively carried out by higher plants.
 5. Name any one Biocontrol agents are used for the management of crop disease.
- Que.2(A) Answer the following (Any one out of two) (07)
1. Discuss the general principles for food preservation.
 2. Discuss the process of mushroom cultivation and applications of mushroom.
- Que.2(B) Attempt any one (Out of two) (04)
1. Describe the microbial spoilage of fresh foods.
 2. Explain the role of *Salmonella spp* in food intoxication
- Que.2(C) Attempt any three (Out of five) (03)
1. Give one example of a Single Cell Protein (SCP).
 2. Which bacterium is commonly associated with staphylococcal food poisoning?
 3. What does AGMark signify in the context of food products?
 4. Name two common microorganisms found as natural flora in fresh food.
 5. Define: Functional Foods
- Que.3(A) Answer the following (Any one out of two) (07)
1. Describe the various methods used for microbial analysis of milk.
 2. Elaborate on the principles of pasteurization for milk preservation.
- Que.3(B) Attempt any one (Out of two) (04)
1. Explain the importance of milk as a medium for microbial growth.
 2. Explain production of cheese in brief.
- Que.3(C) Attempt any three (Out of five) (03)
1. What is the full form of MBRT?
 2. Give two examples of fermented milk beverages.
 3. True or False: The Resazurin test is used to assess the microbial quality of milk.
 4. Name two pathogenic microorganisms that can be found in milk.
 5. What is a Starter Culture?
- Que.4(A) Answer the following (Any one out of two) (07)
1. Explain: The primary and secondary treatment processes involved in municipal waste water treatment.
 2. Describe about anaerobic sludge digestion in treatment of solid waste.

- Que.4(B) Attempt any one (Out of two) (04)
1. Discuss the bacteriological evidence of water pollution.
 2. Write a note on sedimentation as a method of water purification.
- Que.4(C) Attempt any three (Out of five) (03)
1. Name any disinfectant used in water purification?
 2. True or False: Filtration is the final step in drinking water purification.
 3. Sand filters are commonly used in the _____ stage of water purification
 4. Give an example of nuisance organism.
 5. What is the full form of C.O.D?
- Que.5(A) Answer the following (Any one out of two) (07)
1. Explain the importance and various methods of sterility testing for different pharmaceutical products.
 2. Elaborate on the importance of ISO and WHO certifications in the pharmaceutical industry.
- Que.5(B) Attempt any one (Out of two) (04)
1. Describe the role and significance of pharmacopoeia.
 2. Discuss the concepts of Good Manufacturing Practices (GMP).
- Que.5(C) Attempt any three (Out of five) (03)
1. What is the full form of GLP?
 2. Define Pharmaceutical Microbiology?
 3. Name one international organization involved in quality assurance for pharmaceuticals.
 4. True or False: Total Quality Management (TQM) is a continuous process of improvement.
 5. Sterility testing is crucial to ensure pharmaceutical products are free from _____.
