

B.Sc. Semester - 4 (CBCS) Examination**March/April- 2018****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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Ques.1(A) Answer the following (4)

1. Define Soil
2. What are *nif* genes?
3. Define Humus
4. Define Antagonism

Ques.1(B) Answer in brief (Any One) (2)

1. Briefly explain the process of soil formation
2. Briefly explain various profiles of soil

Ques.1(C) Answer in brief (Any One) (3)

1. Discuss Winogradsky's column with suitable diagram
2. Discuss biopesticide and their mode of action in brief.

Ques.1(D) Write a note on (Any One) (5)

1. Nitrogen cycle
2. Biofertilizer

Ques.2(A) Answer the following (4)

1. What do you mean by 'Fresh foods'?
2. What is A Gmark?
3. Define Salmonellosis
4. Define fermented foods

Ques.2(B) Answer in brief (Any One) (2)

1. Discuss in brief the edible mushrooms
2. What is food intoxication? Give example

Ques.2(C) Answer in brief (Any One) (3)

1. Explain the role of *Cl. botulinum* in food poisoning.
2. Briefly discuss fermented foods.

Ques.2(D) Write a note on (Any One) (5)

1. Microorganisms as food
2. Food preservation methods

Ques.3(A) Answer the following (4)

1. Define Pasteurization.
2. What is MBRT?
3. What is spoilage of milk?
4. Define Starter Culture

- Ques.3(B) Answer in brief (Any One) (2)
1. Explain Phosphatase test in brief
 2. How is Kefir made?
- Ques.3(C) Answer in brief (Any One) (3)
1. Write in brief about the types of microorganisms found in milk.
 2. Discuss in brief various methods of milk and milk product preservation.
- Ques.3(D) Write a note on (Any One) (5)
1. Starter Culture
 2. Process of Cheese manufacturing
- Ques.4(A) Answer the following (4)
1. What is sanitary survey?
 2. Enlist any four conditions that affect the microbial population in a water body.
 3. What do you mean by Flocculation?
 4. Define sludge.
- Ques.4(B) Answer in brief (Any One) (2)
1. Why *E.coli* is considered as an index organisms in detection of drinking water quality?
 2. Define BOD and COD stating their importance in Waste water treatment
- Ques.4(C) Answer in brief (Any One) (3)
1. Write a brief note on Solid Waste processing
 2. Describe sand filters in brief
- Ques.4(D) Write a note on (Any One) (5)
1. Waste Water treatment
 2. Drinking water purification
- Ques.5(A) Answer the following (4)
1. Define Pharmacopoeia
 2. Define Quality control
 3. Define ISO.
 4. What is GMP?
- Ques.5(B) Answer in brief (Any One) (2)
1. Explain GLP
 2. What is TQMS?
- Ques.5(C) Answer in brief (Any One) (3)
1. Discuss sterility testing of aqueous solutions
 2. Discuss salient features of membrane filters
- Ques.5(D) Write a note on (Any One) (5)
1. GMP documentation
 2. Microorganisms in Pharmacy – Benefits and Problems

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B.Sc. Microbiology Semester – IV CBCS Examination

March – April 2018

Core Paper – 401: Applied Microbiology

ANSWER KEY

Ques.1A. Answer the following

1. **Soil** is the upper layer of earth in which plants grow, a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles.
2. **The nif genes** are genes encoding enzymes involved in the fixation of atmospheric nitrogen into a form of nitrogen available to living organisms.
3. **Humus** is the dark brown or black coloured organic component of soil, formed by the decomposition of leaves and other plant material by soil microorganisms.
4. **Antagonism** is a type of negative association between microorganisms where both the interacting microbes are harmed.

Ques.2A. Answer the following

1. Food that is not preserved by canning or dehydration or freezing or smoking.
2. **AGMARK** is a certification mark employed on agricultural products in India, assuring that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India.
3. **Salmonellosis**: Infection with bacteria belonging to the genus *Salmonella*. Salmonellosis is a common cause of food poisoning as, for example, from raw eggs.
4. Fermentation in food processing is the process of converting carbohydrates to alcohol or organic acids using microorganisms—yeasts or bacteria—under anaerobic conditions.

Ques.3A. Answer the following

1. **Pasteurization** is a process of exposing food, as milk, cheese, yogurt, beer, or wine to an elevated temperature for a period of time sufficient to destroy certain microorganisms, as those that can produce disease or cause spoilage or undesirable fermentation of food, without radically altering taste or quality.
2. Methylene Blue Dye Reduction Time Test, commonly known as **MBRT test** is used as a quick method to assess the microbiological quality of raw and pasteurized milk.
3. **Spoilage** is a term used to describe the deterioration of milk or any foods' texture, colour, odour or flavor to the point where it is unappetizing or unsuitable for human consumption.
4. **Starter cultures** are those microorganisms that are used in the production of cultured dairy products such as yogurt and cheese. A starter culture can provide particular characteristics in a more controlled and predictable fermentation.

Ques.4A. Answer the following

1. A **sanitary survey** is **defined** as "an onsite inspection of the water source, facilities, equipment, operation, and maintenance of a public water system."
2. Temperature, Hydrostatic pressure, Light, Salinity, Turbidity, Ph, Inorganic and organic constituents
3. The process by which individual particles of clay aggregate into clotlike masses or precipitate into small lumps.
4. Semi-liquid residue produced from industrial processes and treatment of sewage and wastewater.

Ques.5A. Answer the following

1. An official publication containing a list of medicinal drugs with their effects and directions for their use.
2. **Quality control (QC)** is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets the requirements of the client or customer.
3. **The International Organization for Standardization (ISO)** is an international standard-setting body composed of representatives from various national standards organizations. Founded on 23 February 1947, the organization promotes worldwide proprietary, industrial and commercial standards.
4. **Good Manufacturing Practice (GMP)** is a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any pharmaceutical production that cannot be eliminated through testing the final product.