

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Agricultural & Plantation Engineering



Study Programme	: Bachelor of Industrial studies Honours in Agriculture
Name of the Examination	: Final Examination
Course Code and Title	: AGI5470 Food Microbiology
Academic Year	: 2024/2025
Date	: 27 th February 2026
Time	: 2.00 p.m. – 5.00 p.m.
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **2 sections**, **section 1 contains (15) questions** and **section 2 contains (6) questions in five (5) pages**
3. Answer all questions in **section I** and any **four (4) questions from section II**.
4. All questions carry equal marks.
5. Answer for each question should commence on a new page.
6. This is a Closed Book Test (CBT).

Index No:

SECTION I: Answer all questions. Use the space given under each question.

1. What are the **three (03) groups** of living cellular organisms based on the latest classification?

i.

ii.

iii.

2. Write the scientific names of **four (04) Foodborne pathogens**.

i.

ii.

iii.

iv.

3. Write the scientific names of **four (04) Food spoilage microorganism**.

i.

ii.

iii.

iv.

4. Name **two (02) Foodborne Viruses**

i.

ii.

5. Briefly explain why Petri- films are gaining popularity over conventional agar culture plates?

6. Give the type of microorganism that can be present in following foods.

Food type	Microorganism
i. Meat, egg	
ii. Marine water or Brackish water	
iii. Waste or drinking water	
iv. Milk, yoghurt	

7. Briefly explain why Lactic acid bacteria are used as starter cultures in fermented food?

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8. Briefly explain how Vitamin C / ascorbic acid like organic acids can inhibit microbial growth efficiently than the strong acids.

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9. Write **two (02)** spore forming bacteria species.

i.

ii.

.....

10. What does the following abbreviations stand for?

i. VBNC	
ii. SPC	
iii. TNTC	
iv. CFU	

11. Name the most common microorganism causing foodborne disease outbreaks.

i.

.....

12. What is stand for each of the following abbreviations?

i. LIMS	
ii. SOP	

13. Name **two (02)** types of sampling plans available for food microbiology assessments.

i. _____

ii. _____

14. What is the permissible level of counting bacteria colony of a spared plate to enumerate CFU/ml?

i. _____

15. Briefly explain why Rt PCR based tests are more reliable than Antigen test kit used to detect microbial contaminants in foods?

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SECTION 2: Answer any four (04) questions.

1. Draw a labelled diagram to show the growth curve of microorganism and explain the characteristic activities of each phase. (25 Marks)
2.
 - a) Discuss the advantages and disadvantages of formation of bacterial biofilms giving suitable examples. (15 Marks)
 - b) Illustrate the stages of biofilm formation? (10 Marks)
3.
 - a) If you are the manager of a food microbiology testing laboratory, explain the factors to be considered while receiving food samples. (12.5 Marks)
 - b) Explain the procedure to test a given meat sample to obtain aerobic plate counts as CFU/ml. (12.5 Marks)
4. Discuss how intrinsic and extrinsic factors affect on microbial growth? (25 Marks)
5. Write short notes on any of **two (02)** given below. (12.5 Marks each)
 - a) Gram -Negative bacteria is difficult to control than the Gram-Positive bacteria
 - b) Use of sampling plan before the assessment of microbial contamination in a given food sample.
 - c) Rapid novel methods vs conventional methods in food microbiology
6. "Hygiene and the knowledge of food microbiology and safety are crucial for food handlers"
Critically evaluate the given statement giving suitable examples. (25 Marks)