



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	: AGI6582 Food Processing
Academic Year	: 2023/2024
Date	: 6 th February 2025
Time	: 01.30-4.30 hrs
Duration	: 3 hours

General Instructions

1. Read all instructions carefully before answering the questions.
2. Answers should be in clear handwriting.
3. Do not use red colour pen.
4. This question paper consists of **two (02) sections**.

Section I

- Consists of 15 questions in **five (5) pages**.
- Answer all questions.
- All questions carry equal marks.
- Write answers only in the space provided.
- Please do not remove the question paper from the examination hall.
- You may spend **one (01) hour** to answer this section.

Section II

- Contain **six (06) questions**.
- Answer any **four (04) questions**.
- You may spend **two (02) hours** to answer this section.
- All questions carry equal marks.
- Answer for each question should commence from a new page.

Index number

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

1. a) List four (04) contaminants in tomatoes that should be removed for making tomato sauce, and name the best method of cleaning.

Contaminant	Method of cleaning
i.	
ii.	
iii.	
iv.	

2. a) What is the use of colour sorters in the food processing industry?

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- b). Give two (02) examples for colour-sorted food products.

i.

ii.

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3. Give two (02) examples for each cold and hot Extruded products.

Cold extruded products	Hot extruded products
i.	
ii.	

4. What is meant by sublimation in freeze-drying?

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5. Name **two (02)** commercially available freeze-dried food products.

i.

ii.

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6. a) Define the term emulsification.

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b) Name **two (02)** emulsifying agents used in the food industry.

i.

ii.

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7. Name four (04) advantages of fermented food products.

i.

ii.

iii.

iv.

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8. Name two (02) fermented food products for the following fermentation types.

i. Lactic acid fermentation	
ii. Ethanolic fermentation	
iii. Aceticacid fermentation	

9. What are the differences between Pasteurization and Sterilization of heat **treatment methods** applied in food processing?

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10. a) What is meant by “retorting” in food processing?

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b) Give two (02) examples retorted products.

i.

ii.

11. Briefly explain the advantages of using the High-Pressure Processing (HPP) method in food industry.

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12. What is meant by “overrun” in the commercial ice cream-making process?

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13. Name Two (02) novel food processing techniques.

i.
ii.
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14. What is meant by cold pasteurization?

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15. Write the shelf life of the following products.

Pasteurised milk =
Fish at room temperature =
Frozen chicken –
Curd on clay pots without added preservatives =
UHT milk =



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SECTION 2: Answer any four (04) questions.

1. Discuss why the selection of cleaning methods becomes a critical unit operation in the food industry for producing safe processed food products. (25 Marks)
2. a. Briefly explain the importance of knowing the D value and Z value in the commercial sterility of a food product. (Marks 15)
b. Illustrate the calculation of D value in commercial sterility of a food product (Marks 10)
3. "Case hardening can be minimized by applying lower surface temperatures during baking." Critically comment on the given statement. (25 Marks)
4. Write short notes on the following topics.
 - a. Principle behind the Microwave cooking (Marks 12.5)
 - b. Quick/ fast freezing is better than slow freezing to extend the shelf life of a product and obtain a quality product. (Marks 12.5)
5. a. Draw a flow diagram to show unit operations that are applied in the UHT milk manufacturing process using the experience you gained by visiting Kotmale dairy Ltd. (Marks 12.5)
b. Discuss the possibility of applying the novel/ recent advanced food processing methods in the food industry. (Marks 12.5)
6. Discuss the changes that can be applied to the food industry by the applications of nanotechnology. (Marks 25)