



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	: AGI4559 Food and Nutrition
Academic Year	: 2024/2025
Date	: 3 rd February 2026
Time	: 0930-1230hrs
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).

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

1. Illustrate six carbon sugar using Haworth ring formula.

2. Illustrate to show α 1-4 link and α 1-6 link of amylopectin molecule.

3. Briefly explain why glucose is given for athletes before and after the game?

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4. What is stand for each of the following abbreviation?

i. ATP	
ii. TCA	
iii. LDL	
iv. HDL	
v. FFA	

5. Draw the chemical formulae for unsaturated fatty acids using eight carbons and one double bond.

6. What is denoted by C_{18:3} and C_{18:0} in fatty acid nomenclature?

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7. "Sucrose is called as a non-reducing sugar' briefly explain the statemen.

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8. List four (04) macro mineral elements?

i.	ii.
iii.	iv.

9. Briefly explain why it is not recommended to have vitamins without a prescription?

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10. Name the three (03) major parts of the small intestine.

i.

ii.

iii.

11. Name two (02) enzymes which can digest protein.

i.

ii.

12. Give one example for following sugars.

i. Sweetest natural sugar	
ii. least sweetest sugar	
iii. Artificial sugar	

13. Why type I diabetes cannot cure compared to type II diabetes?

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14. List **four (04)** factors effect on basic metabolic rate (BMR).

i.

ii.

iii.

iv.

15. Briefly state why some adults develop allergic symptoms after eating pork meat?

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SECTION 2: Answer any four (04) questions.

1. a) Sketch a diagram of human digestive system. (10 Marks)
b) Classify carbohydrates based on number of monomer units. (5 Marks)
c) Explain the role of stomach in digestion process of ingested carbohydrate in a human body. (10 Marks)
2. a) Illustrate and label the Villi of a small intestine. (10 Marks)
b) Briefly describe why grass is digestible by ruminants but not by humans? (15 Marks)
3. (a) Briefly explain why coconut oil is better than meat containing animal fats? (10 Marks)
(b) Briefly explain the role of Insulin in controlling blood glucose level (15 Marks)
4. Write short notes on the following topics (12.5 Marks each)
(a) Approved functional foods available in the local market?
(b) Role of mineral Ca, P and Vitamin D as nutrients in human diet.
5. Discuss how government policies effect on food security and sustainability? (25 Marks)
6. Critically evaluate the role of food additives in improving food quality and consumer acceptance. (25 Marks)