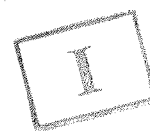


The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Agricultural & Plantation Engineering



Study Programme	: Bachelor of Science Honours in Engineering (Agriculture)
Name of the Examination	: Final Examination
Course Code and Title	: AGX5206 Food Science
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 **six (6)** 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. List five (05) major categories of food nutrients.

i.

ii.

iii.

iv

v.

2. Illustrate six carbon sugar using Haworth ring formula.

3. Illustrate to show Stereoisomerism of L glucose and D glucose.

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

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

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

6. Draw the chemical formulae for unsaturated fatty acids using eight carbons and one double bonds.

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

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8. "Sucrose is called as a non-reducing sugar" briefly explain.

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9. List four (04) macro **mineral** elements in our diet.

i.	ii.
iii.	iv.

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

i.

ii.

iii.

11. What is meant by Lactose intolerance?

12. Give one example for each of the following sugar types.

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

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

14. List **four (04)** factors that affect the basal metabolic rate (BMR).

i.

ii.

iii.

iv.

15. Name two (02) diet-related noncommunicable diseases (NCDs)

i.

ii.

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SECTION 2: Answer any four (04) questions.

1. a) Classify carbohydrates based on number of monomer units and give one example for each class. (10 Marks)
(b) Explain the digestion process of ingested piece of bread in a human body. (15 Marks)
2. a) Illustrate and label the Villi of a small intestine. (10 Marks)

b) Briefly explain why it is not recommended to have vitamins without prescription? (5 Marks)
c) Briefly state why some adults develop allergic symptoms after eating pork meat? (10 Marks)
3. (a) Briefly explain the importance of protein as a nutrient? (12.5Marks)
(b) Why is it important to consider biological value of proteins (12.5 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 the importance of Low-DensityLipoprotein (LDL) cholesterol and High-Density Lipoprotein (HDL) cholesterol in a lipid profile test in relation to reducing the risk of heart disease? (25 Marks)
6. Critically evaluate the role of food additives in improving food quality and consumer acceptance (25 Marks)