



UNIVERSITI KUALA LUMPUR
MALAYSIAN INSTITUTE OF CHEMICAL AND BIO-ENGINEERING TECHNOLOGY

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE	:	CFB20002
COURSE TITLE	:	INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY
PROGRAMME NAME	:	BACHELOR OF CHEMICAL ENGINEERING TECHNOLOGY (FOOD) WITH HONOURS
DATE	:	26 JANUARY 2026
TIME	:	9:00AM - 12:00PM
DURATION	:	3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consist of ONE sections.
4. Section A consist of five questions. Answer FOUR (4) questions only.
5. Please write your answer on the answer booklet provided.
6. Please answer all questions in English only.
7. Refer to the attached Formula/ Appendies. ☐ Tick if applicable

THERE ARE 5 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 100 marks)

Answer FOUR (4) questions.

Please use the answer booklet provided.

Question 1

- (a) Discuss the importance of Food Science and Technology in addressing contemporary challenges related to food quality, safety, and sustainability. Provide examples to illustrate your answer.

(9 marks)

- (b) Describe the classification of food constituents according to their functional roles in the body, and provide examples of macronutrients and micronutrients within each category.

(10 marks)

- (c) Discuss the role of each type of macronutrients and micronutrients as described above in human nutrition and food systems and highlight their importance for health and food quality.

(6 marks)

Question 2

- (a) Explain the principles of irradiation, and fermentation as methods of food processing and preservation. For each method, mention one example food product and describe its benefits in extending shelf life and maintaining food quality.
(8 marks)
- (b) Explain the main processing steps involved in milk processing and preservation plant.
(12 marks)
- (c) Differentiate between pasteurized milk and UHT milk based on processing conditions and shelf life.
(5 marks)

Question 3

- (a) Discuss the classification (type) of lipids into simple, compound, and derived lipids by including their structure, properties, and applications in food processing, nutrition, and industry.
(12 marks)
- (b) Explain how pre-harvest quality measurements are used to determine fruit maturity or ripeness by including a systematic method for maturity assessment in terms of physical, chemical, and sensory parameters.
(8 marks)
- (c) Explain how chemical changes lead to deterioration of fruits and vegetables during storage. Suggest one control measure.
(5 marks)

Question 4

- (a) Explain the requirements for ingredient listing under the Malaysian Food Regulations 1985 and describe how do these requirements protect consumers.

(12 marks)

- (b) A food product imported into Malaysia carries nutrition claims such as "low fat" and "high fiber."

- (i) Explain the legal conditions under which such claims are permitted.
- (ii) Discuss the potential consequences if these claims are not substantiated.

(8 marks)

- (c) According to regulation 352 of the Malaysian Food Regulations 1985 governs juice drinks:

- (i) Describe the mandatory compositional standards that a product must meet to be legally classified as a juice drink.
- (ii) Given a beverage containing fruit juice, water, sugar, and permitted additives, propose the appropriate product name to be displayed on the label and explain why this name complies with regulatory requirements.

(5 marks)

Question 5

- (a) Discuss **THREE (3)** basic food safety principles and explain how each contributes to the prevention of foodborne illness.

(6 marks)

- (b) Assess **SEVEN (7)** principles of HACCP and describe one example of how each principle can be applied in a food processing facility.

(14 marks)

- (c) Explain **FIVE (5)** key requirements for applying Malaysia's JAKIM Halal Certification

(5 marks)

END OF EXAMINATION PAPER