



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

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : CQB 20103
COURSE TITLE : FOOD SAFETY AND PACKAGING TECHNOLOGY
PROGRAMME NAME : BACHELOR OF FOOD SAFETY AND QUALITY TECHNOLOGY WITH HONOURS
DATE : 30 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 4 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 100 marks)

Answer FOUR (4) questions.

Please use the answer booklet provided.

Question 1

Answer questions below.

- (a) Packaging Y is designed to maintain product sterility until the seal is broken. This packaging method ensures a shelf-stable container by placing a commercially sterile product into a commercially sterile container within a commercially sterile environment.

i. Identify packaging Y.

(3 marks)

ii. Discuss **FIVE (5)** advantages of packaging Y.

(10 marks)

- (b) Packaging X is used for a fresh-cut salad in which the air inside the package is replaced with a mixture of nitrogen and carbon dioxide to slow microbial growth and oxidation, thereby extending its shelf life.

i. Identify the type of packaging used in Packaging X.

(3 marks)

ii. Discuss at least **FIVE (5)** advantages of using Packaging X.

(9 marks)

Question 2

Answer questions below.

- (a) Tabulate **FIVE (5)** major food packaging-related hazards, their causes and effects, encountered during the transportation and storage of fruit juice packed in glass, from the manufacturer to the final consumer.

(15 marks)

- (b) Pasteurization is a heat treatment process applied to food and beverages to inactivate pathogenic microorganisms and reduce spoilage, thereby ensuring food safety and extending shelf life. Differentiate between traditional pasteurization and ultra-high temperature (UHT) pasteurization in terms of processing conditions, shelf life, and nutrient content.

(10 marks)

Question 3

Answer questions below.

- (a) Food packaging is designed not only to preserve food quality and extend shelf life, but also to control and eliminate potential hazards along the food supply chain. Based on the statement, discuss **FIVE (5)** factors that may affect the ability of food packaging to eliminate or reduce hazards and ensure food safety.

(10 marks)

- (b) Identify **FIVE (5)** key assessments required in the food distribution system to control and minimize hazards affecting food safety and quality from the manufacturer to the final consumer.

(5 marks)

- (c) Identify the purpose of package testing in food packaging and explain **THREE (3)** methods for evaluating packaging performance.

(10 marks)

Question 4

Answer questions below.

- (a) Food packaging initially functioned primarily as a means of physical protection during handling and transportation. Discuss how the role of food packaging has evolved over time, highlighting the additional functions it serves in modern food systems.

(10 marks)

- (b) Define intelligent packaging and elaborate its functions towards food product.

(15 marks)

Question 5

Answer questions below.

- (a) Define food label.

(3 marks)

- (b) Discuss **THREE (3)** primary functions served by a food label, and justify how do they contribute to consumer information, safety, and product promotion.

(9 marks)

- (c) Elaborate information needed before drafting a label.

(10 marks)

- (d) State **THREE (3)** criteria which all labels should have.

(3 marks)

END OF EXAMINATION PAPER