



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

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : CQB 10203
COURSE TITLE : INTRODUCTION TO FOOD SAFETY AND QUALITY TECHNOLOGY
PROGRAMME NAME : BACHELOR OF CHEMICAL ENGINEERING TECHNOLOGY (FOOD)
WITH HONOURS
DATE : 26 JANUARY 2026
TIME : 2:00PM - 5:00PM
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 TWO sections.
4. Answer ALL questions for Section A.
5. Section B consist of four questions. Answer THREE (3) questions only.
6. Please write your answer on the answer booklet provided.
7. Please answer all questions in English only.
8. Please answer MCQ/EMQ questions using OMR sheet. ☒ *Tick if applicable*
9. Refer to the attached Formula/ Appendies. ☐ *Tick if applicable*

THERE ARE 14 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

1. The three basic principles of food safety include personal hygiene, time and temperature control, and:
 - A. cross-contamination prevention
 - B. risk communication
 - C. food packaging
 - D. nutritional fortification

2. The Food Act 1983 serves as the:
 - A. detailed technical rules under the Food Act
 - B. product labelling rule
 - C. export standard
 - D. main law for food safety and hygiene

3. WHO plays a role in:
 - A. promoting global food security
 - B. releasing Codex Alimentarius
 - C. enforce food law in Malaysia
 - D. improving global public health

4. Codex Alimentarius is developed and issued by:
 - A. FDA
 - B. CAC
 - C. FAO
 - D. WHO

5. In-house verification is best described as:
 - A. Supplier auditing
 - B. Government laboratory testing
 - C. Consumer product testing
 - D. Company's own sampling and testing

6. Fortified foods are added with certain nutrients to:
 - A. Prevent nutrient deficiencies
 - B. Give additional health benefits beyond basic nutrition
 - C. Improve traceability
 - D. Replace nutrients lost during processing

7. Enriched foods are added with certain nutrients to:
 - A. Improve traceability
 - B. Prevent nutrient deficiencies
 - C. Give additional health benefits beyond basic nutrition
 - D. Replace nutrients lost during processing

8. In HACCP, the monitoring procedures involve:
 - A. Staff training
 - B. Measuring and observing Critical Control Points (CCPs)
 - C. Product promotion
 - D. Equipment purchase

9. The three main routes of cross-contamination include food-to-food, hands-to-food, and
- A. soil-to-food
 - B. air-to-food
 - C. light-to-food
 - D. equipment-to-food
10. Yoghurt with probiotics helps improve:
- A. digestion and gut health
 - B. appetite
 - C. skin tone
 - D. hair and nails
11. Safe foods are described as those that are:
- A. fortified and enriched
 - B. expensive and organic
 - C. hazard-free and nutritionally adequate
 - D. high in calories
12. Functional foods are added with certain nutrients to:
- A. Prevent nutrient deficiencies
 - B. Replace nutrients lost during processing
 - C. Improve traceability
 - D. Give additional health benefits beyond basic nutrition

13. Nutritional quality refers to how well food provides:
- A. colour and flavour
 - B. calories and proteins
 - C. essential nutrients and safety
 - D. water and fibre
14. Processing methods such as heat or drying can:
- A. make food unsafe
 - B. remove toxins only
 - C. always improve nutrients
 - D. reduce heat-sensitive vitamins
15. Codex Alimentarius is best described as:
- A. A national food law
 - B. A global collection of food standards and guidelines
 - C. A factory inspection system
 - D. A food certification scheme
16. Current GMP (cGMP) focuses on:
- A. Latest technologies and practices
 - B. Outdated practices
 - C. Manual systems only
 - D. Traditional methods

17. Identity Preserved (IP) products support verified claims such as:
- A. Fast cooking
 - B. Imported quality
 - C. Organic and halal
 - D. Artificial flavoring
18. The main cause of cross-contamination in food handling is:
- A. proper sanitation
 - B. raw and cooked food contact
 - C. pasteurization
 - D. proper sanitation
19. Creating a fake version of a popular food brand is a type of food fraud known as:
- A. counterfeiting
 - B. addition
 - C. dilution
 - D. substitution
20. Traceability in food systems allows the ability to:
- A. Increase advertising
 - B. Improve taste and colour
 - C. Track food through the supply chain
 - D. Reduce price

21. The following are core components of a risk analysis, **EXCEPT**:
- A. risk communication
 - B. risk management
 - C. risk assessment
 - D. risk identification
22. Food safety culture focuses mainly on:
- A. Technology use
 - B. Food marketing
 - C. Human behaviour and work practices
 - D. Food packaging
23. New food technologies raise safety concerns mainly because:
- A. Long-term health effects may be unknown
 - B. They improve food quality
 - C. They are cheaper
 - D. They reduce processing time
24. *Salmonella* is considered a:
- A. biological hazard
 - B. chemical hazard
 - C. physical hazard
 - D. biological and chemical hazard

25. The Malaysia Food Quality Control Programme was established under the:
- A. SIRIM
 - B. Ministry of Health (MOH)
 - C. JAKIM
 - D. Department of Standards
26. Climate-related food safety risks increase mainly due to changes in:
- A. Temperature and humidity
 - B. Food marketing
 - C. Packaging materials
 - D. Consumer lifestyle
27. One major challenge in climate-related food safety management is:
- A. Limited access to advanced technology
 - B. Too many trained personnel
 - C. Overuse of monitoring systems
 - D. Small operational cost
28. Foodborne diseases remain a global issue mainly because they:
- A. Increase food innovation
 - B. Cause illness and economic loss
 - C. Improve food quality
 - D. Reduce food demand

29. Limited sharing of food safety data causes difficulty in:
- A. Product pricing
 - B. Food labelling
 - C. Food advertising
 - D. Detecting outbreaks
30. The following are good personal hygiene practices for food workers **EXCEPT**:
- A. does not involve in food preparation when sick
 - B. wears a clean uniform
 - C. work with food with open cuts on the hand
 - D. washes hands with soap regularly
31. The following statements about FDA are true, **EXCEPT**:
- A. publishes the Food Code
 - B. a leading global food and drug regulator
 - C. an agency of Singapore
 - D. regulates food processing and sale
32. FAO plays a role in:
- A. releasing Codex Alimentarius
 - B. promoting global food security
 - C. improving global public health
 - D. enforce food law in Malaysia

33. The objective of the Food Safety and Quality Division is to:
- A. prevent health hazards and food fraud
 - B. improve food taste
 - C. increase food exports
 - D. promote fast food marketing
34. Raw materials are released for production only after:
- A. delivery to the warehouse
 - B. payment to the supplier
 - C. QA has verified documents and results
 - D. payment to the supplier
35. Presently, SIRIM continues to play a role in:
- A. food marketing
 - B. helping industries comply with standards
 - C. food advertising
 - D. releasing Malaysian Standards
36. The Supplier Qualification Team usually consists of:
- A. QA, QC, and Purchasing
 - B. QA, QC, and production operators
 - C. QA, QC, and Sales
 - D. External auditors

37. In HACCP, corrective actions are taken when:
- A. Records are complete
 - B. CCPs meet limits
 - C. Production is finished
 - D. CCPs fail to meet limits
38. A key factor affecting nutritional quality in raw materials is:
- A. packaging design
 - B. consumer preference
 - C. maturity and time of harvest
 - D. the storage color
39. Based on Codex Alimentarius, the process of risk assessment consists of four steps. The third step is:
- A. risk characterization
 - B. hazard identification
 - C. hazard characterization
 - D. exposure assessment
40. The following are the importance of a risk analysis to food safety **EXCEPT**:
- A. Improve standards & food safety systems
 - B. Improve packaging appearance
 - C. Provide evidence for decision-making
 - D. Estimate risks to human health & safety

SECTION B (Total: 60 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

- (a) You have performed a risk assessment of one hazard towards one type of food. Apply your understanding to provide **ONE (1)** information for each of the four stages of risk assessment. Your answers must be specific to the chosen hazard and food.

(16 marks)

- (b) Based on your answer in (a), propose **TWO (2)** control measures to reduce the risk of the identified hazard in the selected food.

(4 marks)

Question 2

- (a) In a cake manufacturing company, workers are involved in food preparation and packaging. Apply GMP requirements related to personnel to ensure food safety.

(12 marks)

- (b) You are a QC officer in a milk processing plant. One of the Critical Control Points (CCPs) is the pasteurization step. The Critical Limit (CL) is that the milk must reach 72°C for at least 15 seconds. Apply your HACCP knowledge to:

- i. Propose a suitable method to monitor the milk temperature during pasteurization, and how to record and save the monitoring data.

(4 marks)

- ii. Propose a corrective action if the milk does not reach 72°C, and justify your answer.

(4 marks)

Question 3

- (a) You are a QA officer in a food processing company. You are tasked with designing a HACCP plan for a new product. Apply your knowledge to list the seven principles of HACCP in the correct order that you would follow to ensure food safety.

(14 marks)

- (b) You are preparing food in a kitchen. Using a calibrated thermometer, list the correct temperatures for each of these steps and explain why each temperature is important: hot holding, cold holding, and reheating.

(6 marks)

Question 4

- (a) As a QC, apply your knowledge to explain how food processing and storage conditions may affect the nutritional quality of food.

(12 marks)

- (b) Explain **TWO (2)** types of food fraud and give one example for each.

(8 marks)

END OF EXAMINATION PAPER

