



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

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : CQB 20203
COURSE TITLE : FOOD SAFETY AND LEGISLATION
PROGRAMME NAME : BACHELOR OF FOOD SAFETY AND QUALITY TECHNOLOGY WITH HONOURS
DATE : 28 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 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*

SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

1. The temperature range known as the *Danger Zone* for bacterial growth is
 - A. 0°C – 5°C
 - B. 5°C – 57°C
 - C. 5°C – 40°C
 - D. 57°C – 74°C

2. An **unacceptable** method for thawing frozen food is
 - A. Thawing at room temperature
 - B. Thawing in a microwave and cooking immediately
 - C. Thawing in the refrigerator
 - D. Thawing under cold running water

3. Cooked and cooled food must be reheated to
 - A. 74°C within 1 hour
 - B. 57°C within 2 hours
 - C. 80°C immediately
 - D. 68°C within 1 hour

4. Cold potentially hazardous food must be held at
 - A. 8°C or below
 - B. 5°C or below
 - C. 0°C or below
 - D. Below 10°C

5. A key characteristic of viruses related to foodborne illness is that they
- A. Cause visible food spoilage
 - B. Require oxygen to survive
 - C. Reproduce only inside a living host cell
 - D. Multiply rapidly in food
6. A hazard in food safety is best defined as
- A. A biological, chemical, or physical agent likely to cause illness or injury if not controlled
 - B. Any microorganism found in food
 - C. Any food that causes spoilage
 - D. A condition that only affects food quality
7. An item classified as a physical hazard includes
- A. Shellfish toxin
 - B. Aflatoxin
 - C. Metal fragments
 - D. Food additives
8. Spore-forming bacteria that can cause foodborne illness include
- A. *Escherichia coli* O157:H7 and *Shigella* spp.
 - B. *Clostridium botulinum* and *Bacillus cereus*
 - C. *Listeria monocytogenes* and *Salmonella* spp.
 - D. *Vibrio cholerae* and *Yersinia enterocolitica*

9. FATTOM is a tool used to explain
 - A. Methods of cooking food safely
 - B. Steps in cleaning and sanitizing
 - C. Types of foodborne diseases
 - D. Conditions that allow foodborne pathogens to grow

10. Microorganisms that grow only in the absence of oxygen are known as
 - A. Aerobic bacteria
 - B. Facultative bacteria
 - C. Acidophilic bacteria
 - D. Anaerobic bacteria

11. The pH range that supports the growth of most pathogenic bacteria is
 - A. 4.6 – 7.5
 - B. Exactly 14.0
 - C. Below 4.0
 - D. Above 9.0

12. Foods that are most likely to support the growth of pathogenic bacteria are
 - A. Dry and low-protein foods
 - B. Foods with high sugar content
 - C. Acidic foods with low moisture
 - D. Moist, protein-rich foods

13. An example of a biological hazard is
- A. Glass fragments
 - B. Pesticide residue
 - C. Salmonella spp.
 - D. Cleaning sanitizer
14. In sanitation procedures, the term "sanitize" refers to
- A. Air-drying equipment after washing
 - B. Reducing microorganisms to safe levels on clean surfaces
 - C. Removing visible dirt from surfaces
 - D. Washing surfaces with detergent only
15. Wearing disposable gloves in food manufacturing must comply with good hygiene practices by
- A. Wearing gloves throughout the entire work shift
 - B. Reusing gloves if no visible contamination is present
 - C. Changing gloves only when switching from raw to cooked food
 - D. Using disposable gloves once and discarding them after use
16. Hand washing is required after
- A. Serving customers
 - B. Using the restroom
 - C. Beginning food preparation
 - D. Putting on disposable gloves

17. Food hygiene is best described as a practice that focuses on
- A. Improving the taste and appearance of food
 - B. Protecting food from contamination and preventing bacterial growth
 - C. Increasing food production speed
 - D. Reducing food costs in manufacturing
18. One key objective of ISO 22000 is to
- A. Eliminate all food safety hazards
 - B. Harmonize food safety methods internationally
 - C. Replace national food regulations
 - D. Reduce certification costs
19. HACCP is best described as a food safety system that focuses on
- A. End-product inspection
 - B. Consumer satisfaction
 - C. Food quality grading
 - D. Prevention of food safety hazards
20. The "Check" stage of the PDCA cycle in ISO 22000 focuses on
- A. Assessing results and system performance
 - B. Implementing resources and programs
 - C. Establishing food safety objectives
 - D. Reviewing and improving the system

21. In ISO 22000, Prerequisite Programs (PRPs) are defined as
- A. Documentation requirements for certification bodies
 - B. Basic conditions and activities necessary to maintain a hygienic environment
 - C. Optional activities supporting HACCP
 - D. Control measures applied only at CCPs
22. The Global Food Safety Initiative (GFSI) is best described as
- A. An ISO certification body
 - B. A private organization benchmarking food safety standards
 - C. A food inspection agency
 - D. A government regulatory authority
23. The risk in ISO 22000 defined as
- A. A danger to consumers and workers
 - B. A hazard to consumers
 - C. A situation with a negative outcome
 - D. An effect of uncertainty
24. ISO is best described as
- A. A private food certification company
 - B. A food inspection authority under the United Nations
 - C. An international governmental regulatory body
 - D. An independent, non-governmental international organization

25. A biological hazard in food includes
- A. Cleaning detergent
 - B. Bacteria
 - C. Glass fragments
 - D. Staples
26. A food importer sells imported cookies without any labelling information in Bahasa Malaysia or English. During inspection, no ingredient list or expiry date is found on the packaging.
- A. Food Act 1983 only
 - B. Food Regulations 1985
 - C. Food Irradiation Regulations 2011
 - D. Food Hygiene Regulations 2009
27. Registration with the Ministry of Health is mandatory before sale for
- A. Natural mineral water and packaged drinking water
 - B. All packaged food products
 - C. All ready-to-eat foods
 - D. All imported food products
28. Hygiene requirements for food premises and food handlers must comply with
- A. Food Act 1983
 - B. Food Hygiene Regulations 2009
 - C. Food Regulations 1985
 - D. Food Irradiation Regulations 2011

29. Authorised officers are legally permitted to enter food premises in order to
- A. Issue business licenses
 - B. Set food safety standards
 - C. Conduct inspections and take food samples
 - D. Approve food labels
30. The Food Act 1983 (Act 281) is enforced mainly to ensure that
- A. Food businesses comply with international trade agreements
 - B. Food trade activities are profitable
 - C. Food prices are controlled by the government
 - D. The public is protected against health hazards and food fraud
31. Incidental adulteration generally occurs due to
- A. Carelessness and poor hygienic conditions
 - B. Addition of toxic chemicals for profit
 - C. Deliberate substitution of inferior materials
 - D. Misbranding and false labeling
32. Food additives become adulterants when they
- A. Exceed the permitted safety limits
 - B. Enhance shelf life
 - C. Are used in traditional recipes
 - D. Improve food texture

33. The use of detergents in milk can lead to
- A. Enhanced milk preservation
 - B. Gastrointestinal and renal problems
 - C. Increased calcium absorption
 - D. Improved nutritional quality
34. Milk adulteration with urea is mainly done to
- A. Prevent microbial growth
 - B. Increase shelf life
 - C. Increase whiteness and solid-not-fat (SNF) content
 - D. Improve taste
35. Several consumers develop swelling in the legs and body after consuming mustard oil purchased from a local market. Laboratory testing reveals the presence of argemone oil.
The illness associated with this adulteration is
- A. Food allergy
 - B. Glaucoma
 - C. Epidemic dropsy
 - D. Renal failure
36. Used tea leaves are dried, mixed with coal-tar dye and a small amount of fresh tea leaves, then resold as loose tea.
The main reason for adding iron filings to tea leaves in such cases is to
- A. Increase shelf life
 - B. Prevent microbial growth
 - C. Increase weight
 - D. Improve aroma

37. Metallic adulteration may result from
- A. Improper food labeling
 - B. Contamination with arsenic, lead, or tin
 - C. Mixing cheaper food ingredients
 - D. Addition of starch or detergent
38. Fish collected from a polluted river show high levels of mercury contamination. Consumption of this fish may lead to
- A. Brain damage and paralysis
 - B. Hyperactivity
 - C. Kidney stones
 - D. Asthma attacks
39. Tea leaves are often adulterated with iron filings primarily to
- A. Enhance flavor
 - B. Increase shelf life
 - C. Improve color
 - D. Increase weight
40. Intentional adulteration is commonly carried out
- A. Due to poor hygiene conditions
 - B. Due to environmental pollution
 - C. For financial gain
 - D. Because of pesticide residues

SECTION B (Total: 60 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

A catering company supplies ready-to-eat chicken rice to a university cafeteria. Several students report vomiting, diarrhea, and fever within 24 hours after consumption. Investigation shows that the cooked chicken was left at room temperature for several hours before serving, cutting boards used for raw chicken were also used for cooked chicken without proper cleaning, and flies were observed in the food preparation area.

- (a) Identify and explain **THREE (3)** types of food hazards present in this scenario.
(9 marks)

- (b) Describe the food handling and hygiene failures that contributed to the foodborne illness.
(6 marks)

- (c) Recommend **FIVE (5)** food safety control measures to prevent recurrence of such incidents.
(5 marks)

Question 2

A food court operates several cooked-food stalls. During a routine inspection, it was found that cooked chicken rice was prepared in the morning and left on the counter at room temperature until late afternoon before being served. Some customers later reported symptoms of food poisoning.

Based on the FAT TOM concept, answer the following questions:

- (a) Define FAT TOM and state its importance in food safety.
(4 marks)
- (b) Identify **FOUR (4)** components of FAT TOM that may have contributed to the food poisoning incident in this situation.
(4 marks)
- (c) Explain how temperature and time in this scenario could accelerate the growth of foodborne microorganisms.
(6 marks)
- (d) Suggest **THREE (3)** proper food handling practices that should be implemented to prevent this type of contamination.
(6 marks)

Question 3

A food inspector received complaints that certain grocery shops are selling milk, edible oil, and spices at unusually low prices. Laboratory analysis revealed that some of these food items were adulterated with harmful substances.

Based on the Food Adulteration topic, answer the following:

- (a) Define food adulteration and state **TWO (2)** practices that are considered food adulteration.
(4 marks)
- (b) Classify **THREE (3)** types of food adulteration and briefly explain each type.
(6 marks)
- (c) State **THREE (3)** reasons why food adulteration has become common in society.
(6 marks)
- (d) Using **TWO (2)** examples, explain how adulteration can affect human health.
(4 marks)

Question 4

A food inspector receives several complaints from consumers about a small dairy outlet. The milk sold appears unusually thick and very white, with excessive foam when shaken. Some consumers later experience stomach discomfort and kidney-related symptoms. Laboratory analysis confirms the presence of **urea and detergent** in the milk.

- (a) Identify and explain the type of food adulteration involved.
(6 marks)
- (b) Explain the health effects associated with the adulterants detected.
(6 marks)
- (c) Propose **FOUR (4)** food safety control and preventive measures to avoid such adulteration.
(8 marks)

END OF EXAMINATION PAPER

