



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

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : CFD20403
COURSE TITLE : FOOD QUALITY AND SANITATION
PROGRAMME NAME : DIPLOMA IN CHEMICAL ENGINEERING TECHNOLOGY (FOOD)
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 TWO sections.
4. Section A consist 25 MCQ or EMQ questions. Answer ALL questions.
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 16 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 25 marks)

Answer ALL questions.

Please use the objective answer sheet provided.

1. The statement that BEST differentiates Quality Assurance (QA) from Quality Control (QC) is:
 - A. Quality Assurance and Quality Control have the same objectives and approaches in food manufacturing.
 - B. Quality Assurance focuses on preventing defects through process-oriented and proactive activities, while Quality Control focuses on identifying defects through product-oriented and reactive activities.
 - C. Quality Assurance is product-oriented and reactive, while Quality Control is process-oriented and proactive.
 - D. Quality Assurance focuses on identifying defects, while Quality Control focuses on preventing defects.

2. The purpose of sanitizing a surface in a manufacturing facility is _____.
 - A. To dry the surface quickly
 - B. To remove food and other types of soil from a surface
 - C. To reduce the number of microorganisms on a clean surface to safe levels
 - D. To rinse off soap and detergent

3. The main type of micro-organism responsible for food poisoning is:
 - A. Virus
 - B. Mould
 - C. Bacteria
 - D. Parasite

4. The element of appearance that MOST directly enhances food acceptability is:
- A. Nutrition, safety, shelf life, and portion size
 - B. Packaging, labeling, storage, and branding
 - C. Texture, aroma, flavour, and aftertaste
 - D. Presentation, visual appeal, shape, and color
5. A key factor contributing to cross-contamination of food products in the processing environment is:
- A. Proper sanitation practices
 - B. Effective handwashing techniques
 - C. Regular equipment maintenance
 - D. Poor personal hygiene
6. The correct action for handling cuts and wounds in a manufacturing facility is_____.
- A. They should be covered with a bandage or dressing
 - B. They should be ignored and not given any attention
 - C. They should be left uncovered to heal naturally
 - D. They should be washed with soap and water once a day
7. The following is a biological hazard in food processing EXCEPT:
- A. Viruses
 - B. Bacterial pathogens
 - C. Chemical contaminants
 - D. Parasites

8. The recommended attire for employees in a manufacturing facility is_____.
- A. Casual clothing
 - B. Business attire
 - C. Protective clothing, such as lab coats and hairnets
 - D. No specific attire is required
9. Cross-contamination of food occurs when:
- A. Using food handling gloves for handling money
 - B. Washing hands before handling food
 - C. Keeping food stored in food-grade containers
 - D. Cleaning and sanitizing equipment and benches
10. The statement that BEST explains how food manufacturers define product quality is:
- A. Food manufacturers establish product quality as a company policy to meet consumer needs, while simultaneously ensuring compliance with governmental laws and satisfying quality criteria including appearance, texture, flavour, nutritive value, and safety.
 - B. Food manufacturers define product quality mainly by complying with governmental regulations, while consumer criteria such as appearance and flavour are secondary considerations.
 - C. Food manufacturers focus on internal production efficiency and texture control, assuming that regulatory compliance will automatically ensure consumer acceptance.
 - D. Food manufacturers rely primarily on sensory attributes to define product quality, provided that minimum legal safety standards are met.

11. The group of factors that MOST directly influences food acceptability is:
- A. Colour measurement, texture analysis, microbiological quality, and chemical stability
 - B. Processing method, storage conditions, hygiene practices, and labeling
 - C. Nutritional composition, packaging design, shelf life, and cost
 - D. Sensory attributes, cultural influences, psychological factors, and individual differences
12. The correct combination of statements regarding food safety and temperature control is :
- Statement 1: Safe food and quality safe food are free from visible and invisible contamination
- Statement 2: Food should be cooled down within 2 hours, from 21°C to 5°C.
- Statement 3: Food in a freezer should be kept at -18°C or below.
- A. Statements 1 and 2 are true.
 - B. Statements 1, 2, and 3 are true.
 - C. Statements 1 and 3 are true.
 - D. Statements 2 and 3 are true.
13. The correct combination of statements regarding food storage practices is:
- Statement 1: The temperature in a dry store should be between 11°C and 18°C.
- Statement 2: Raw food should be stored on the higher shelves in the kitchen cold room.
- A. Statement 1 is true and Statement 2 is false.
 - B. Statements 1 and 2 are true.
 - C. Statement 1 is false and Statement 2 is true.
 - D. Statements 1 and 2 are false.

14. HACCP is applicable to sectors _____.
- A. Software development.
 - B. It is suitable to be implemented by organizations directly or indirectly involved in various sectors of the food industry and related supply chain.
 - C. The airline industry.
 - D. The motor industry and specifically the production line.
15. The first stage of putting together a HACCP system is:
- A. Creating a flow diagram that gives a simple and clear outline of the steps involved in the food process of the company.
 - B. Making sure everyone has the correct forms that have to be filled in.
 - C. Putting together a HACCP team.
 - D. Determining the product lines and distribution channels that should be included in the HACCP plan.
16. The correct action for items after they have been sanitized in a manufacturing facility is _____.
- A. They should be immediately used for food preparation
 - B. They should be stored in a covered container
 - C. They should be air-dried upside down
 - D. They should be wiped dry with a clean towel

17. The three safe ways to defrost food are:
- A. On the kitchen bench, in the refrigerator and In the microwave
 - B. In the refrigerator, in cold water (changed every 30 minutes) and in the microwave
 - C. In the refrigerator, in the microwave and in hot water (changed every 30 minutes)
 - D. In cold water (changed every 30 minutes), outside on the table and on the kitchen bench
18. The temperature range in which food experiences rapid microbial growth (Danger Zone) is:
- A. 5 °C to 60 °C
 - B. 8 °C to 60 °C
 - C. 15 °C to 70 °C
 - D. 40 °F to 140 °F
19. The primary purpose of verification procedures in the HACCP system is:
- A. Identifying potential food hazards
 - B. Establishing critical limits
 - C. Keeping records and documentation
 - D. Ensuring the HACCP plan is effective
20. The following are critical control points in the HACCP system EXCEPT:
- A. Packaging color
 - B. Cooling time
 - C. Storage temperature
 - D. Cooking temperature

21. The activity that BEST represents the role of Quality Assurance (QA) in a food manufacturing facility is:
- A. Adjusting processing parameters during production to correct non-conforming products
 - B. Ensuring compliance with Standard Operating Procedures (SOPs), conducting internal audits, and managing traceability and mock recall programs
 - C. Monitoring production output to increase daily yield
 - D. Conducting final product testing to identify defective products before release
22. The primary purpose of establishing corrective action procedures in the HACCP system is:
- A. Addressing deviations from critical limits
 - B. Preventing cross-contamination
 - C. Identifying potential food hazards
 - D. Keeping records and documentation
23. The potential consequence of inadequate cooling systems in food processing is:
- A. Increased shelf life
 - B. Enhanced food quality
 - C. Reduced microbial growth
 - D. Risk of pathogen proliferation
24. The main objective of establishing monitoring procedures in the HACCP system is:
- A. Implementing corrective actions
 - B. Identifying potential food hazards
 - C. Keeping records and documentation
 - D. Ensuring critical limits are met

25. Good Manufacturing Practices (GMPs) contribute to preventing biological hazards in food production by:
- A. Ensuring hazards associated with personnel and environment are controlled
 - B. Monitoring the nutritional content of food products
 - C. Controlling hazards during transportation only
 - D. Regulating the marketing of food products

SECTION B (Total: 75 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

Discuss **FIVE (5)** control processes implemented in a food manufacturing facility to ensure compliance with Good Manufacturing Practice (GMP). Your answer should include relevant examples and the specific parameters controlled in each process.

(25 marks)

Question 2

Under the Malaysian Food Act 1983, authorized officers appointed by the Ministry of Health (MOH) are granted specific powers to ensure compliance with food safety laws. Explain **FIVE (5)** powers of an authorized officer under the Malaysian Food Act 1983, including their authority related to inspection, sampling, seizure, investigation, enforcement actions, and legal proceedings.

(25 marks)

Question 3

Statistical Process Control (SPC) is a quality management tool used to monitor and control manufacturing processes through the application of statistical methods. By analyzing process data in real-time, SPC helps identify variations that may affect product quality, allowing for timely corrective actions to maintain consistency and compliance with specifications. Analyze the trends observed in each of the provided SPC charts. Provide examples of potential situations that could explain these trends in your analysis

(a) Trend A.

Refer Below - Figure1 : Trend A .

(5 marks)

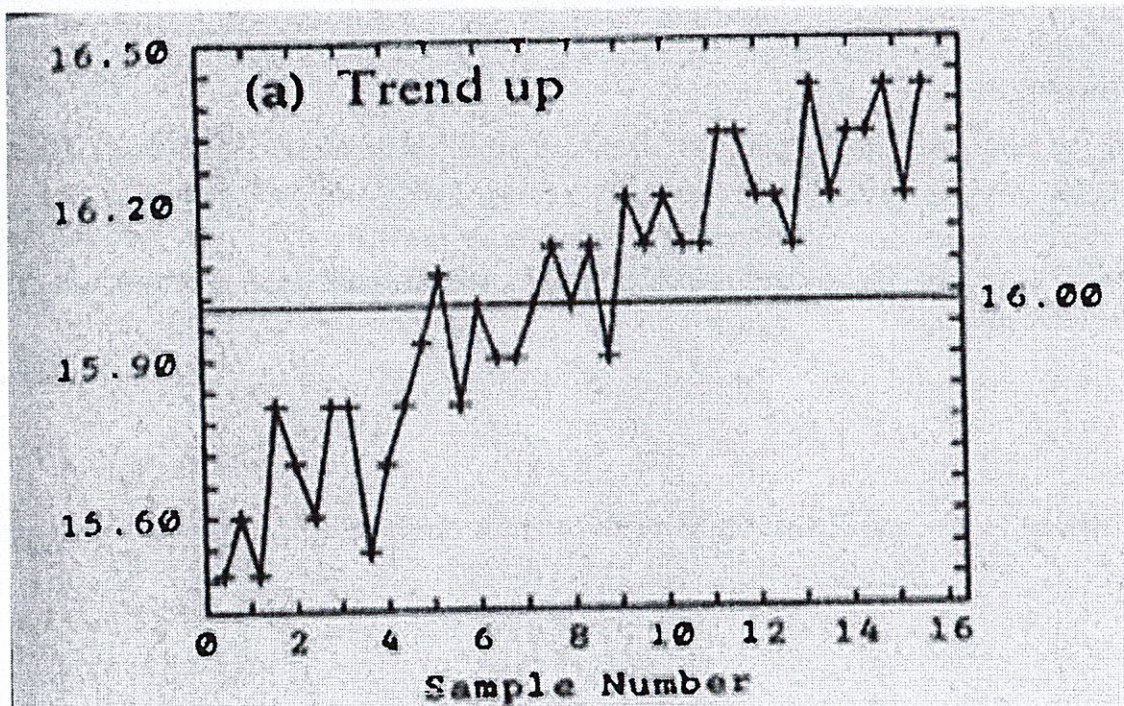


Figure 1: Trend A

(b) Trend B.

Refer Below - Figure2 : Trend B .

(5 marks)

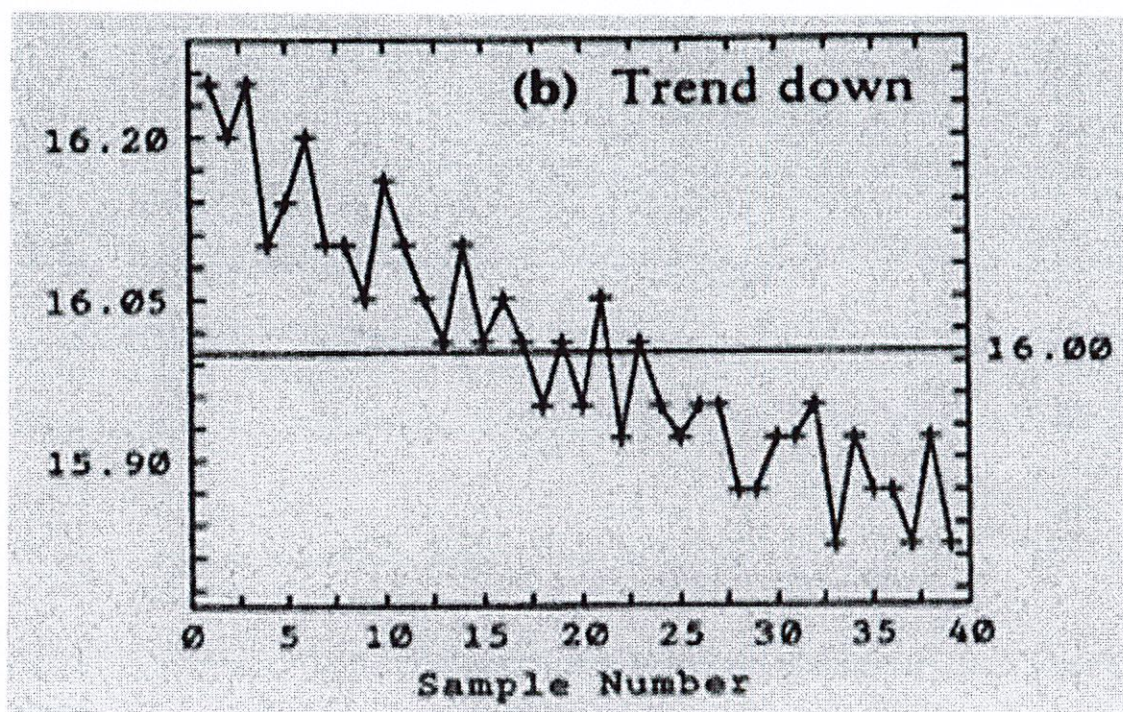


Figure 2: Trend B

(c) Trend C.

Refer Below - Figure3 : Trend C .

(5 marks)

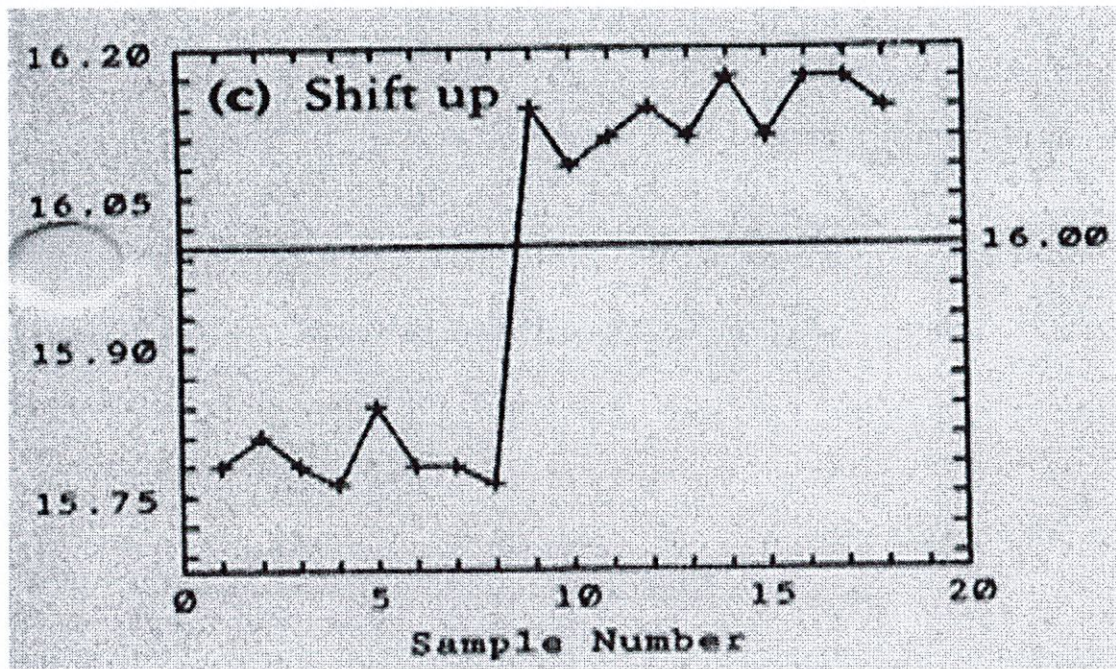


Figure 3: Trend C

(d) Trend D.

Refer Below - Figure4 : Trend D.

(5 marks)

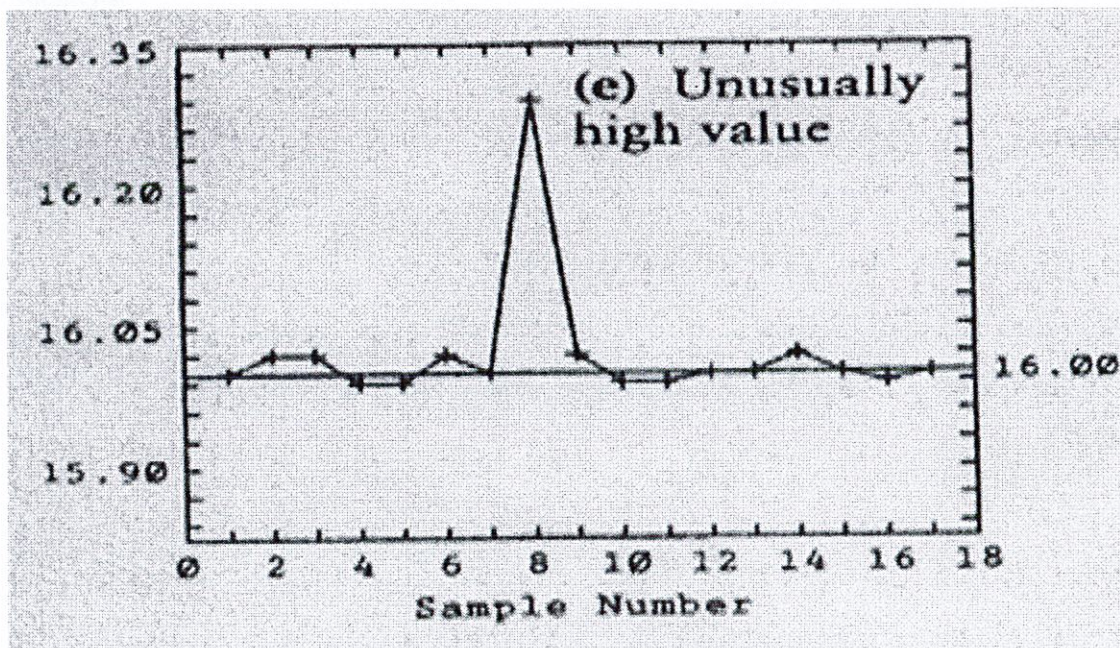


Figure 4: Trend D

(e) Trend E.

Refer Below - Figure5 : Trend E.

(5 marks)

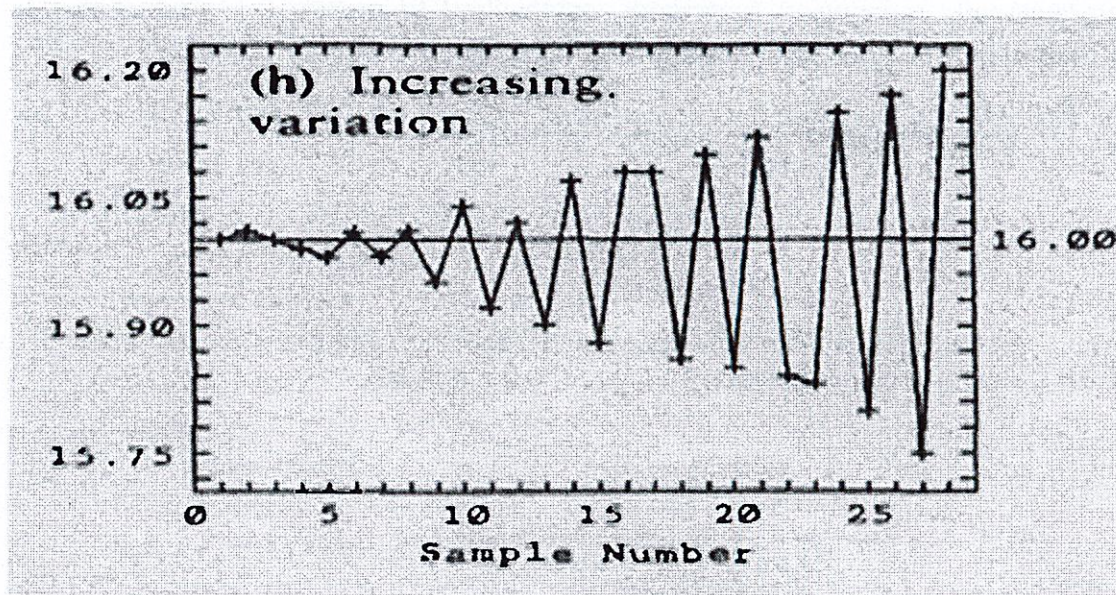


Figure 5: Trend E

Question 4

The Hazard Analysis and Critical Control Points (HACCP) system is the most internationally recognised framework, established to ensure the production safe food through a preventive and systematic approach.

(a) Outline the **SEVEN** (7) principles of HACCP.

(10 marks)

(b) Ahmad's factory, that produce yoghurt, plans to carry out processing control to meet the product specifications. Based on Figure 6 below,

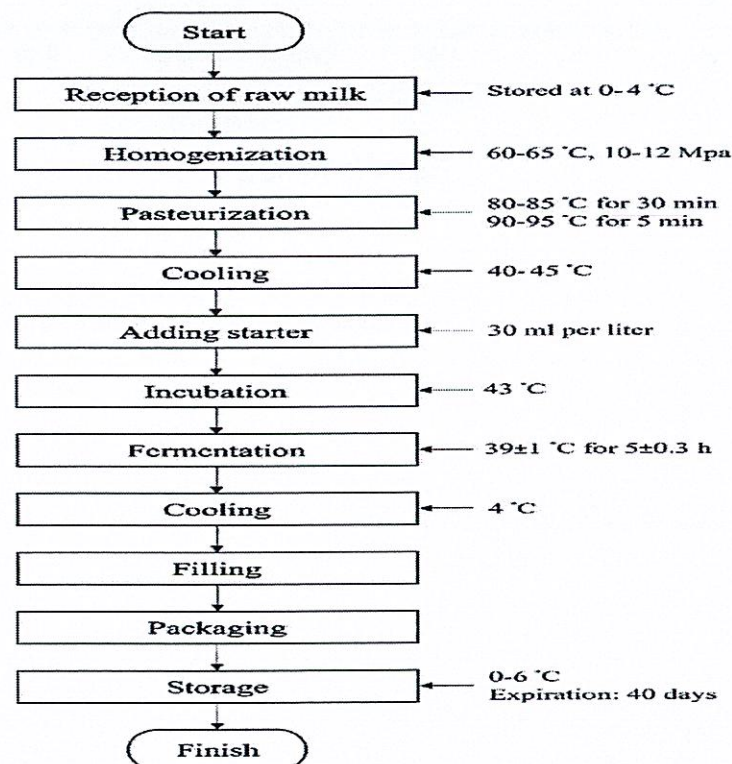


Figure 6: Production of Yoghurt

- i. Identify the hazards during the raw milk reception and inspection step and discuss the measures to control these hazards effectively.

(5 marks)

- ii. Identify **ONE (1)** critical control point (CCP), discuss the hazards involved and control measures that need to be taken during that step in yoghurt processing.

(5 marks)

- (c) State **FIVE (5)** types of measurements used for monitoring in food processing operations to ensure compliance with HACCP requirements.

(5 marks)

END OF EXAMINATION PAPER

