



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION

SEMESTER II

SESSION 2022/2023

COURSE NAME : FOOD SAFETY & QUALITY ASSURANCE

COURSE CODE : BWD 31502

PROGRAMME CODE : BWD

EXAMINATION DATE : JULY/AUGUST 2023

DURATION : 2 HOURS

INSTRUCTION :

1. ANSWER ALL QUESTIONS
2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 Open book
 Closed book
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **FIFTEEN (15)** PAGES

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ANSWER ALL QUESTIONS
SECTION A:

- Q1 “The most important quality component and an assurance that food will not cause harm to consumer during the preparation and/or consumption”. The statement refers to definition of _____.
- A. Food safety
 - B. Food quality
 - C. Food inspection
 - D. Food processing

(1.5 marks)

- Q2 The possible bacteria that can cause such a condition in **Figure Q2.1** is _____.



Figure Q2.1 Canned foods with bulging condition

- A. *Campylobacter*
- B. *Escherichia coli*
- C. *Salmonella typhi*
- D. *Clostridium botulinum*

(1.5 marks)

- Q3 This substance has been fed to livestock to cure or prevent diseases related to animals. However, the substance that resides in the animal’s body may pose direct and indirect threats to human health. The substance in this statement refers to _____.

- A. hormone
- B. melamine
- C. antibiotics
- D. acrylamide

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(1.5 marks)

Q4 Food processing such as frying and grilling in starchy foods has produced a potential carcinogenic substance known as _____.

- A. melamine
- B. antibiotics
- C. acrylamide
- D. 3-monochloropropanediol

(1.5 marks)

Q5 Chemesthesis is categorised under _____.

- A. physical factors
- B. sensory factors
- C. chemical factors
- D. nNon-sensory factors

(1.5 marks)

Q6 The logo on the CalciYum bottle in **Figure Q6.1** indicates that _____.



Figure Q6.1 CalciYum Cultured Milk

- A. the product has a premium quality.
- B. the product meets the nutrient criteria specified by the Ministry of Health.
- C. the product has a longer shelf-life than other cultured milk of different brands.
- D. the product is pure and meets the requirements of the scheme Authentic Food certification.

(1.5 marks)

Q7 This organisation plays a crucial role in defining the quality of food-grade chemicals in terms of their identity, strength and purity based on the elements of safety and Good Manufacturing Practices (GMP). Which organisation does the statement refers to?

- A. The Food Chemicals Codex
- B. The American Spice Trade Association
- C. The American Association of Cereal Chemists
- D. The Association of Analytical Communities International (formerly known as AOAC)

(1.5 marks)

Q8 The responsibility of the food control system in Malaysia lies with _____.

- A. consumer only
- B. food technologist
- C. consumer, government and food industry sector
- D. food technologist, food industry sector and government

(1.5 marks)

Q9 Malaysian brand logo (Figure Q9.1) was developed by SME Corporation in collaboration with SIRIM. What is the purpose of the logo introduction?



Figure Q9.1 Malaysian brand logo

- A. To show that the product is certified as authentic and pure.
- B. To show that our local products also have good and excellent quality.
- C. As a mechanism to strengthen food safety and traceability along the food supply chain.
- D. As an indication that the product carries the logo has met the nutrient criteria stated by the Ministry of Health (MOH).

(1.5 marks)

Q10 Which of the following management approaches involves the participation of all employees for the continuous of the company's processes and products?

- A. Inspection
- B. Quality control
- C. Quality assurance
- D. Total Quality Management

(1.5 marks)

Q11 Jezamine works in Pacific Food Industry, and she is responsible to develop the company's plans and execute actions to ensure quality improvement. Her position requires her to focus on preventing any defects that may occur to the products. She is probably in _____ department.

- A. inspection
- B. production
- C. quality control
- D. quality assurance

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(1.5 marks)

- Q12** “A part of quality management focused on fulfilling quality requirements”. The statement refers to _____.
- A. inspection
 - B. quality control
 - C. quality assurance
 - D. total quality management

(1.5 marks)

- Q13** Total Quality Management personnel play a role in _____.
- A. inspecting, measuring, classifying, and selecting.
 - B. checking and solving problems with statistical methods.
 - C. evaluating the quality level achieved, devising plans and actions for quality improvement.
 - D. identifying precise quality objectives and promoting the activity of inter-department groups

(1.5 marks)

- Q14** In the PDCA cycle (**Figure Q14.1**) below, the process of executing actions to standardise the process can be categorised under _____.

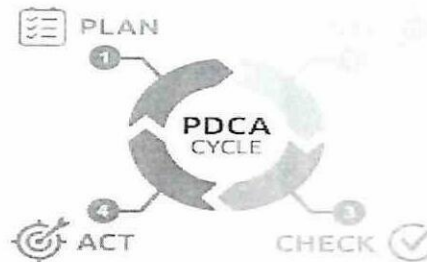


Figure Q14.1 PDCA cycle

- A. Do
- B. Act
- C. Plan
- D. Check

(1.5 marks)

- Q15** The formula below can be used to measure quality. Q refers to quality, P refers to performance, while E refers to expectations. P for Performance is the performance measured by?

$$Q = (P / E)$$

- A. Consumer
- B. Manufacturer
- C. Food safety officer
- D. All the above

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(1.5 marks)

Q16 One of the prerequisite programs in the Food Safety and Quality Management System is ____.

- A. Safe Quality Food (SQF)
- B. Good Manufacturing Practices (GMP)
- C. Hazard analysis critical control point (HACCP)
- D. International Organisation for Standardisation (ISO)

(1.5 marks)

Q17 Food is considered as safe to be consumed when:

- I. It is expensive and tasty.
- II. It satisfies its intended use.
- III. It follows the legal standard.
- IV. It is nutritious, clean and hygiene.

- A. I only
- B. I and II
- C. II and III
- D. II, III and IV

(1.5 marks)

Q18 How do you describe Good Manufacturing Practices (GMP)?

- A. The minimum sanitary and processing requirements for food companies to ensure adherence to all quality and safety basic requirements.
- B. A set of coordinated activities to direct and control an organization to continually improve the effectiveness and efficiency of its performance.
- C. A preventative, proactive and systematic approach to food safety, which relies on the identification and control of all the known associated health hazards in the food chain.
- D. A document that provides requirements, specifications, guidelines, or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose.

(1.5 marks)

Q19 One of the certification bodies for HACCP in Malaysia is ____.

- A. FAMA
- B. MARDI
- C. Sime Darby Sdn Bhd
- D. SIRIM QAS International Sdn Bhd

(1.5 marks)

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- Q20** This organisation develops standards and guides to encourage good practice in accreditation and certification. But it does not issue any certificates, or carry out any accreditation process, approval or control the certification bodies. The organisation refers to _____.
- A. the Food Chemicals Codex
 - B. the American Association of Cereal Chemists
 - C. International Organisation for Standardisation (ISO)
 - D. the Association of Analytical Communities International (formerly known as AOAC)
- (1.5 marks)
- Q21** Listed below are the main components in Quality Management Systems (QMS), except _____.
- A. quality planning
 - B. quality performance
 - C. quality improvement
 - D. quality assurance
- (1.5 marks)
- Q22** “A set of standards that helps organizations ensure they meet customer and other stakeholder needs within statutory and regulatory requirements related to a product or service”. This statement refers to _____.
- A. GMP
 - B. MeSTI
 - C. ISO 9004
 - D. ISO 9000
- (1.5 marks)
- Q23** The role of the X standard is to provide confidence as a result of demonstration, in product conformance to established requirements, while the Y standard is to achieve benefits for all stakeholders' groups through sustained customer satisfaction. X and Y refer to?
- A. X: ISO 9001, Y: ISO 9000
 - B. X: ISO 9001, Y: ISO 9004
 - C. X: ISO 9001, Y: ISO 9000
 - D. X: ISO 9001, Y: ISO 22000
- (1.5 marks)

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- Q24** “Plates that contain agar are pressed against a surface to determine the amount of contamination. This method is also known as the swab method”. What is the name of the assay procedure to evaluate the sanitation effectiveness based on the description given?
- A. Surface Rinse Method
 - B. Direct Contact Contamination Removal
 - C. Direct Surface Agar Plating (DSAP) Technique
 - D. None of above

(1.5 marks)

- Q25** What of the following are integrated quality management systems?

- I. ISO 9001
 - II. ISO 9004
 - III. ISO 22000
 - IV. British Retail Consortium (BRC)
- A. I and II
 - B. III and IV
 - C. I, II and III
 - D. II, III and IV

(1.5 marks)

- Q26** Mr. Hisham runs a start-up food business. Which of the food safety and quality management systems that he can apply in his company?

- I. GMP
 - II. MeSTI
 - III. HACCP
 - IV. FSSC 22000
- A. I and IV
 - B. I, II and III
 - C. I, III and IV
 - D. I, II, III and IV

(1.5 marks)

- Q27** What are the preparation that the food management plant can prepare before receiving real audit from third party auditors?

- I. Determine the audit criteria and plan appropriate preparations.
- II. Planning what meals to be served to the third-party auditors during the audit days
- III. Conduct a self-evaluation of their facility based on the audit criteria or do self-auditing.
- IV. Prepare a small, but convenient workspace for the auditors and be ready to provide any assistance, if needed

- A. I, II and III
- B. I, II and IV
- C. I, III and IV
- D. I, II, III and IV

(1.5 marks)

Q28 One of the disadvantages of using the surface rinse method as an assay procedure to evaluate the sanitation effectiveness is _____.

- A. the method is limited to horizontal surfaces only
- B. the method is limited to the vertical surface only
- C. the method is suitable for all types of equipment
- D. the method is not accurate and precise than the swab method

(1.5 marks)

Q29 The Prego Mushroom Carbonara Cream (**Figure Q29.1**) has been recalled from the market due to the sign of spoilage that has been identified by the product manufacturer. The type of recall can be categorised under _____.



Figure 29.1 Prego Mushroom Carbonara Cream

- A. Class I
- B. Class II
- C. Class III
- D. Class IV

(1.5 marks)

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Q30. The chart in **Figure Q30.1** refer to which types of quality tools used for quality control?

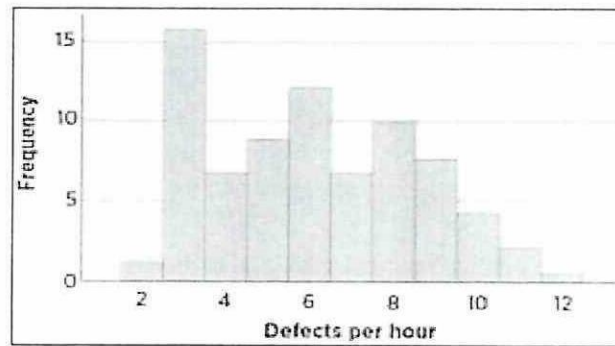


Figure Q30.1 Chart of quality defects

- A. Histogram
- B. Checklists
- C. Pareto analysis
- D. Fishbone diagram

(1.5 marks)

Q31 “By seeing the steps involved in an operation or process, everyone develops a clear picture of how the operation works and where problems could arise”. This statement refers to?

- A. Checklists
- B. Histogram
- C. Flowcharts
- D. Pareto analysis

(1.5 marks)

Q32 Convenience sampling and Quota sampling are the types of _____ sampling methods.

- A. stratified
- B. systematic
- C. probability
- D. non-probability

(1.5 marks)

Q33 “Selecting participants in numbers proportionate to their numbers in the larger population, no randomisation”. The statement refers to which type of sampling methods?

- A. Quota sampling
- B. Stratified sampling
- C. Snowball sampling
- D. Judgement sampling

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(1.5 marks)

Q34 “In X populations, it does not matter where the sample is taken from because all the sub-samples have the same properties”. X refers to?

- A. Homogenous
- B. Heterogenous
- C. Homogenous and heterogenous
- D. None of the answer

(1.5 marks)

Q35 Which of the following require in tightened sampling inspection?

- I. Bigger sampling size is used
- II. More cost is incurred
- III. Has higher risk and error is bigger
- IV. Less expensive

- A. I and II
- B. I and III
- C. III and IV
- D. I, II and III

(1.5 marks)

Q36 Select the correct answer for X and Y according to the description in the table below.

X	Y
Deals with how well a measurement agrees with an accepted value.	Deals with how well a series of measurements agree with each other.

- A. X = Precision, Y = Absolute
- B. X = Accuracy, Y = Precision
- C. X = Precision, Y = Accuracy
- D. X = Accuracy, Y = Absolute

(1.5 marks)

Q37 To obtain “Bersih, Selamat dan Sihat” recognition from the Ministry of Health, food entrepreneurs need to ensure ____.

- I. their food premises maintain a clean premise
- II. their food premises provide only safe and healthy food
- III. their food premise supplies food in the right size of dishes according to individual needs
- IV. their food premise provides delicious, large portion serving size and oily food to satisfy consumer’s preferences

- A. I and II
- B. I, II and III
- C. I, III and IV
- D. III and IV

(1.5 marks)

Q38 The Ministry of Health provides Malaysian Food Certification for the certification below, except ____.

- A. MyGAP
- B. MyFood Tag
- C. Food Defense
- D. Trust MyCatering

(1.5 marks)

Q39 Which are the correct criteria based on the category of food caterers to apply for Trust MyCatering certification scheme?

A.

Category	Number of employees	Booking scale
Small	<5	<50 pax
Medium	11 to 20	<500 pax
Mass	>20	>500 pax

B.

Category	Number of employees	Booking scale
Small	<10	<100 pax
Medium	11 to 20	<500 pax
Mass	>20	>500 pax

C.

Category	Number of employees	Booking scale
Small	<10	<100 pax
Medium	15	<300 pax
Mass	>20	>500 pax

D.

Category	Number of employees	Booking scale
Small	<10	<100 pax
Medium	11 to 20	<500 pax
Mass	>50	>1000 pax

(1.5 marks)

- Q40** Organic Food Certification is a _____ scheme.
- A. mandatory
 - B. voluntary
 - C. obligatory
 - D. none of above
- (1.5 marks)
- Q41** Bacteria that contaminate accidentally and reside temporarily on the food handler's hands is known as _____.
- A. residual microorganism
 - B. transient microorganism
 - C. symbiotic microorganism
 - D. none of above
- (1.5 marks)
- Q42** One of the examples of transient bacteria is _____.
- A. *Escherichia coli*
 - B. *Coryneform bacilli*
 - C. *Staphylococcus epidermis*
 - D. none of above
- (1.5 marks)
- Q43** Johan is the production worker in the Atlantic Food Sdn. Bhd. Johan is having a high fever and continuous coughing. Due to his conditions, he should be _____
- A. allowed to work if his conditions are not worsened.
 - B. allowed to work with tight supervision from his supervisor.
 - C. given a sick leave and not allowed to enter the food premise.
 - D. given a short break in the restroom of the food premise and get back to his work when his conditions getting better.
- (1.5 marks)
- Q44** Hot water thermal sterilisation _____.
- I. more efficient than steam sterilisation
 - II. expensive sterilisation method
 - III. usually used for plate heat exchangers and eating utensils
 - IV. not amenable to continuous sanitising of conveyors
- A. I and II
 - B. I and III
 - C. I, II and III
 - D. I, III and IV
- (1.5 marks)

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Q45 Which of the following properties that ideal sanitiser should have for sanitisation purposes?

- I. Surface compatibility
- II. Convenient to be used
- III. Environmentally friendly
- IV. Good cleaning properties

- A. I, II and III
- B. I, II and IV
- C. I, III and IV
- D. I, II, III and IV

(1.5 marks)

Q46 Quaternary ammonium compound is one of the chemical sanitisers that commonly being used for _____ control.

- A. physical
- B. biological
- C. environmental
- D. none of above

(1.5 marks)

Q47 Mechanical abrasives can effectively remove soil when manual labour is used. However, these cleaning aids should not be used on any surface that has direct contact with food. Example of mechanical abrasives are _____.

- A. steam guns
- B. water hoses
- C. steel and wool
- D. high-pressure steam

(1.5 marks)

Q48 Which is not the common chemical fumigants used for pest control?

- A. Phosphine
- B. Ethylene oxide
- C. Pheromone trap
- D. Methyl bromide

(1.5 marks)

Q49 Rani works in a multinational food company, and she is responsible for the implementation of HACCP system in her company. What are things that she needs to consider during the establishment of HACCP?

- I. Process flow diagram
- II. Management responsibility
- III. Price of the finished product
- IV. Product description and the intended use of the product

- A. I and II
- B. I, II and III
- C. I, II, and IV
- D. I, II, III, and IV

(1.5 marks)

Q50 The management principles of ISO 22000 include all the elements below, except ____

- A. Leadership
- B. Customer focus
- C. Sanitation and hygiene
- D. Evidence-based decision making

(1.5 marks)

SECTION B:

Q51 Explain how the Integrated Pest Management (IPM) programme helps to reduce pest infestation.

(6 marks)

Q52 The Global Food Safety Initiative (GFSI) does not provide accreditation or certification, but it does recognise a few food safety standards, including the International Food Standard (IFS) and the British Retail Consortium (BRC).

(a) Describe the IFS and BRC food safety standards.

(6 marks)

(b) The IFS and BRC Food safety standards are comparable to GHP/GMP concepts, the HACCP plan, and the ISO 9001 standard. Evaluate the conditions not covered by any of the aforementioned standards.

(6 marks)

(c) The GFSI's vision of 'once certified, acknowledged everywhere' is now a reality. Justify the advantages and disadvantages of the Malaysian food industry investing in GFSI certification.

(7 marks)

- END OF QUESTIONS -