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## UNIVERSITI TUN HUSSEIN ONN MALAYSIA

### FINAL EXAMINATION SEMESTER I SESSION 2021/2022

COURSE NAME : INTRODUCTION TO FOOD SCIENCE  
AND TECHNOLOGY

COURSE CODE : BWD 10302

PROGRAMME CODE : BWD

EXAMINATION DATE : JANUARY / FEBRUARY 2022

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWER ALL QUESTIONS.

2. THIS FINAL EXAMINATION IS AN  
ONLINE ASSESSMENT AND  
CONDUCTED VIA **OPEN BOOK**.

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) Based on Figure **Q1(a)**, explain **FIVE (5)** how the understanding of food science is important to ensure the safety, quality and availability of food product. (10 marks)
- (b) As the prevalence for Type 2 diabetes in Malaysia continues to rise, discuss **FIVE (5)** factors that should be considered by food scientist in designing a better consumer. (10 marks)
- Q2** (a) Karen is a 20 years old college student weighs at 45 kg and has a height of 155 cm. She actively participates in marathon races during weekend. She also spends her evenings studying in order to better her marks. Based on her lifestyle and daily routine as a student, suggest a menu planning and show how the selection of meals could help Karen to maintain her health and fitness. (15 marks)
- (b) Carbohydrate, protein, and fat have functional properties that define the quality of particular food products in addition to their nutritional worth. In each of the products listed below, identify their functional attributes:
- (i) Fruit jam
  - (ii) Bread
  - (iii) Tomato sauce
  - (iv) Pavlova
  - (v) Puff pastry
- (5 marks)
- Q3** (a) Amran was a professional cyclist in his 20's. He is now a 48 years old coach to young athletes who weighs 75 kg and stands 160 cm tall.
- (i) Using the Harris Benedict formula, determine Amran's body mass index (BMI) and the daily calorie requirements to maintain his current weight at his current activity level. (7 marks)
- (ii) Discuss **FOUR (4)** implications on Amran's well-being if his regular diet exceeds his daily calorie needs. (8 marks)
- (b) List **FIVE (5)** hormones that are involved in the synthesis of molecule for the formation of new cells. (5 marks)
- Q4** (a) Using **ONE (1)** agricultural produce as an example, distinguish between food processing and food manufacturing. (5 marks)

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- (b) Explain **FIVE (5)** principles of food manufacturing that can be used in the agricultural industry.

(10 marks)

- (c) During the national crisis, the food supply chain was disrupted, resulting in an excess of raw resources. This issue has significant economic impact especially towards fruits and vegetables producers. As a future food technologist, suggest **FIVE (5)** suitable processing and preservation techniques to prevent fruits and vegetables from going to waste.

(5 marks)

- Q5** (a) Food production is one of the key areas in ensuring a sustainable supply of food. Discuss **SIX (6)** environmental measures that could be used in the production of fruit juice.

(12 marks)

- (b) In the food industry, it is essential to follow all safety measures guidelines to prevent food safety outbreak. Identify **FOUR (4)** requirements in evaluating and analyzing the potentially hazardous food.

(8 marks)

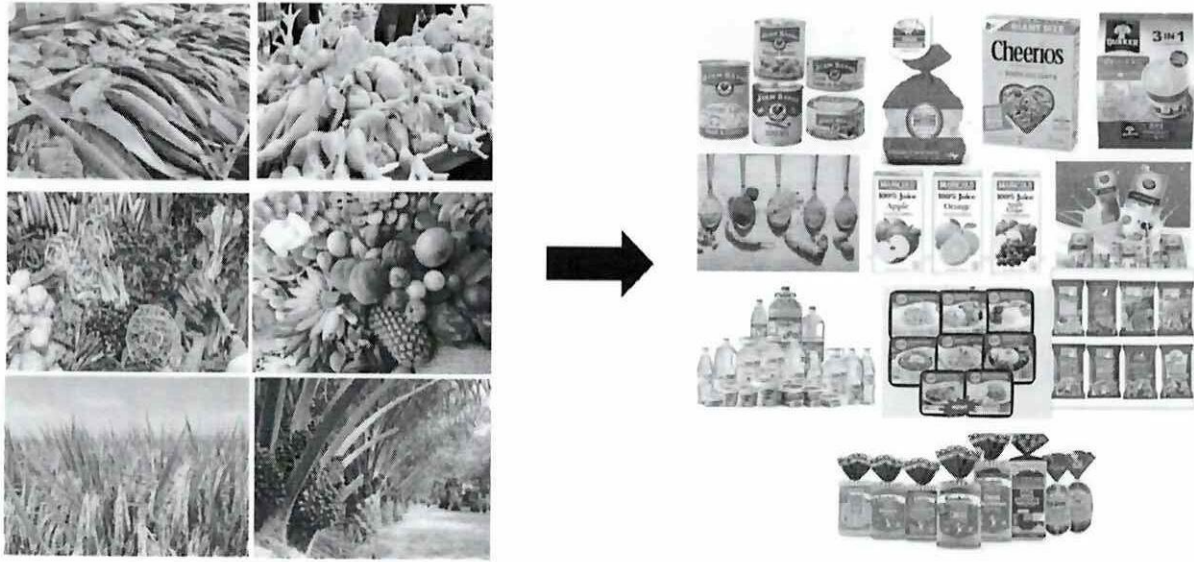
**- END OF QUESTIONS -**

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**FINAL EXAMINATION**

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**Figure Q1(a)**

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