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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
(TAKE HOME)  
SEMESTER I  
SESSION 2020/2021**

COURSE NAME : SNACK AND CONFECTIONERY  
PRODUCT TECHNOLOGY

COURSE CODE : BWD 31303

PROGRAMME CODE : BWD

EXAMINATION DATE : JANUARY / FEBRUARY 2021

DURATION : 3 HOURS

INSTRUCTION : ANSWERS ALL QUESTIONS  
**OPEN BOOK EXAMINATION**

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

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UNIVERSITI TUN HUSSEIN ONN MALAYSIA  
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**Q1** Nourlie Food Industries plans to launch a new cookie product. Unfortunately, after R&D it was found that the product easily become rancid, stale and the microbiological quality significantly deteriorated as well as having low sensory acceptability all in less than 3 months. **Table Q1** and **Figure Q1** shows the ingredient and the packaging of the product.

- (a) From the given information, examine **FOUR (4)** reasons behind the less stability and low shelf life of the cookies. (10 marks)
- (b) Examine how a food additive can prevent colour, flavor and nutrient deterioration of the product? (10 marks)

**Q2** (a) The application and uses of compounds coating are much more versatile as compared to chocolate coating. Examine this statement. (5 marks)

(b) Tempering chocolate is an essential step in making smooth, glossy, evenly colored coating for dipped chocolates. Most methods for tempering chocolate use a thermometer to give a precise temperature for melting and cooling the chocolate. In contrast to this, identify a method to temper chocolate without a thermometer. (5 marks)

(c) Plain chocolate that needs to be reworked is much easier than chocolate confections. Illustrate the method of reworking of chocolate confection to produce high quality confectionery. (10 marks)

**Q3** (a) By varying the method used and temperature of boiling, it is possible to make a wide variety of sweet confectionery products. Examine how the degree of sucrose inversion affects the production of sweet. (6 marks)

(b) List **FOUR (4)** factors leading to the spoilage of sweet confectionery product. (2 marks)

(c) Based on your answer in **Q3 (b)**, choose **TWO (2)** factors and identify approaches to resolve the problem. (6 marks)

(d) The ultimate choice of the sweet confectionery packaging materials depends on the manufacturer's target market. Analyze the latest trends in sugar confectionery packaging available in the market today. (6 marks)



- Q4** The snack and confectionery is constantly evolving to meet the demands of modern-day consumers. With the impact of global health concerns surrounding COVID-19, the consumption of snacks and confectionery with health benefits have been trending for all the right reasons. While indulgence is a key factor, consuming confectionery that is guilt-free without high sugar content is being preferred. Meanwhile choosing low calorie snack is mostly favored.
- a) List **FOUR (4)** high intensity sweeteners commonly used in confectionery products. (4 marks)
- b) One of the factors affecting choice of sweetener is the rate of release in the mouth. Discuss how the high intensity sweetener affect the sensory acceptability of chewing gum. (4 marks)
- b) Describe medium-chain triglycerides. (4 marks)
- c) Simulate a result of replacing shortening in biscuit formulation with medium chain triglycerides. (8 marks)

**-END OF QUESTIONS -**

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**Table Q1**

Ingredients	Weight (gram)
Wheat Flour	160
Milk Flour	20
Emplex	5
Egg yolk	21.06
Butter	80
Butter Oil	2
Essense Vanilla	2
Cashew	10
Pistachio	10
Dried Papaya	10
Dried Apricot	10
Temperature	150-160
Time	25



**Figure Q1**

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