



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

FINAL EXAMINATION
OCTOBER 2025 SEMESTER

COURSE CODE : CFB30103
COURSE TITLE : FOOD SENSORY AND EVALUATION
PROGRAMME NAME : BACHELOR OF CHEMICAL ENGINEERING TECHNOLOGY (FOOD)
WITH HONOURS
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. 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*

THERE ARE 8 PAGES OF QUESTIONS INCLUDING THIS PAGE

SECTION A (Total: 40 marks)

Answer ALL questions.

Please use the answer booklet provided.

Question 1

Taste interactions have long interested psychologists, physiologists, and food scientists in sensory evaluation of food.

- (a) Explain the mechanism of taste adaptation and mixture interactions in sensory evaluation. Provide examples of how these mechanisms can influence in the perception of food.

(10 marks)

- (b) Describe a sensory evaluation experiment to determine threshold of sweet taste. Include the methodology, sample preparation and expected results.

(10 marks)

Question 2

A sense may be defined as a mechanism in the body which allows a human or an animal to receive special information about the world and transmit it along nerve pathways to the brain.

- (a) Asses the role of the five human senses in overall assessment of food quality in sensory evaluation of food. Provide specific examples for each sense.

(10 marks)

- (b) Trigeminal sensitivity is an important aspect of human sensory physiology, particularly its relevance to food enjoyment. Discuss the irritants and sensations of the trigeminal descriptors involved in the following food examples:

- i. Herbal tea

(5 marks)

- ii. Mustard

(5 marks)

SECTION B (Total: 60 marks)

Answer THREE (3) questions only.

Please use the answer booklet provided.

Question 1

A sensory evaluation was done where 8 panelists are asked to evaluate the coded samples for hedonic test according to the panelist preference. Samples used in this test are herbal tea served at different temperatures of 40°C and 60°C. The herbal tea are from the same brand and same batch. Each coded with 3-digit different random number and presented in identical sample container. After testing by panelists, the results are tabulated in Table 1 below.

Refer Below - Table1 : Tabulated score for Acceptance Test Data .

Table 1: Tabulated score for Acceptance Test Data

Panelist	Temperature 40°C	Temperature 60°C
1	6	4
2	5	4
3	6	3
4	4	5
5	5	5
6	5	4
7	6	5
8	7	6

- (a) State the hypothesis for this test.

(4 marks)

- (b) By using a suitable statistical test, analyze whether these two samples have significant difference or not (at 0.05 level of significance). State your conclusion.

Refer Below - Table2 : T Table . Figure1 : Formula .

(16 marks)

Table 2: T Table

df/p	0.40	0.25	0.10	0.05	0.025	0.01	0.005	0.0005
1	0.324920	1.000000	3.077684	6.313752	12.70620	31.82052	63.65674	636.6192
2	0.288675	0.816497	1.885618	2.919986	4.30265	6.96456	9.92484	31.5991
3	0.276671	0.764892	1.637744	2.353363	3.18245	4.54070	5.84091	12.9240
4	0.270722	0.740697	1.533206	2.131847	2.77645	3.74695	4.60409	8.6103
5	0.267181	0.726687	1.475884	2.015048	2.57058	3.36493	4.03214	6.8688
6	0.264835	0.717558	1.439756	1.943180	2.44691	3.14267	3.70743	5.9588
7	0.263167	0.711142	1.414924	1.894579	2.36462	2.99795	3.49948	5.4079
8	0.261921	0.706387	1.396815	1.859548	2.30600	2.89646	3.35539	5.0413
9	0.260955	0.702722	1.383029	1.833113	2.26216	2.82144	3.24984	4.7809
10	0.260185	0.699812	1.372184	1.812461	2.22814	2.76377	3.16927	4.5869
11	0.259556	0.697445	1.363430	1.795885	2.20099	2.71808	3.10581	4.4370
12	0.259033	0.695483	1.356217	1.782288	2.17881	2.68100	3.05454	4.3178

$$t = \frac{\sum d}{\sqrt{\frac{n \sum d^2 - (\sum d)^2}{n-1}}}$$

Where:

d = difference between each pair of observations

n = number of paired samples

Figure 1: Formula

Question 2

Megah Holding Sdn. Bhd. is evaluating the potential introduction of an emulsifier from a new supplier for use in its chocolate product. The new emulsifier is claimed to have no impact on taste compared with the current formulation. The company intends to conduct a sensory evaluation to determine whether there is a significant preference for the chocolate containing the new emulsifier when compared with three competitor samples. Please address the following questions:

- (a) Decide the most appropriate sensory evaluation test, focusing on measuring consumer preference, to assess the significant difference between the new chocolate and the other three competitor samples.

(2 marks)

- (b) Discuss the procedures involved in conducting the sensory evaluation test for this chocolate, including the preparation prior to sensory evaluation, the presentation of samples to the panelists, and the method of data analysis.

(10 marks)

- (c) Construct an evaluation form for this type of test, including four sensory attributes that are suitable for evaluating chocolate.

(8 marks)

Question 3

Food acceptability is a subjective measure based on hedonics (pleasure) which is affected by many factors, that are related to the individual, the food, or the environment in which the food is consumed. Describe in detail how these factors influenced the sensory acceptance of food among consumers.

- (a) Nutritional status
(5 marks)
- (b) Product image
(5 marks)
- (c) Price and availability
(5 marks)
- (d) Sensory properties
(5 marks)

Question 4

In the food industry, sensory analysis plays an important role in guiding marketing strategies, assessing product quality, and supporting the development of new food products.

- (a) Explain the **THREE (3)** key steps involved in defining a problem within the context of marketing research.
(10 marks)
- (b) Construct a questionnaire form which consists of **TEN (10)** questions that surveys the preferability of consumer towards Nutty Cereal Chocolate Bar. The questions should cover the aspects of consumer behaviour and marketing strategy.
(10 marks)

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END OF EXAMINATION PAPER

