

PRACTICE PAPER
TECHNOLOGY AND LIVING (FOOD SCIENCE AND TECHNOLOGY)
PAPER 1

(1½ hours)

This paper must be answered in English

GENERAL INSTRUCTIONS

1. This paper consists of **THREE** sections, A, B and C.
2. Attempt **ALL** questions.
3. Section A consists of multiple-choice questions.
4. Answers to Section A should be marked on the Multiple-choice Answer Sheet while answers to Sections B and C should be written in the Answer Book. In the Answer Book, start each question (not part of a question) on a new page. **The Answer Sheet and the Answer Book must be handed in separately at the end of the examination.**

INSTRUCTIONS FOR SECTION A (MULTIPLE-CHOICE QUESTIONS)

1. Read carefully the instructions on the Answer Sheet. After the announcement of the start of the examination, you should first stick a barcode label and insert the information required in the spaces provided. No extra time will be given for sticking on the barcode label after the 'Time is up' announcement.
2. When told to open this book, you should check that all the questions are there. Look for the words '**END OF SECTION A**' after the last question.
3. All questions carry equal marks.
4. **ANSWER ALL QUESTIONS.** You are advised to use an HB pencil to mark all the answers on the Answer Sheet, so that wrong marks can be completely erased with a clean rubber. You must mark the answers clearly; otherwise you will lose marks if the answers cannot be captured.
5. You should mark only **ONE** answer for each question. If you mark more than one answer, you will receive **NO MARKS** for that question.
6. No marks will be deducted for wrong answers.

SECTION A – Multiple-choice Questions

This section carries 15 marks. Answer **ALL** questions in this section. Choose the **best** answer for each question.

1. A natural component in canola oil that prevents rancidity is _____.
 - A. vitamin A
 - B. vitamin C
 - C. vitamin D
 - D. vitamin E

2. A food item contains 20g protein, 20g carbohydrates and 20g fats. Its total energy value is:
 - A. $(20 \times 9\text{kJ}) + (20 \times 9\text{kJ}) + (20 \times 17\text{kJ})$
 - B. $(20 \times 17\text{kJ}) + (20 \times 17\text{kJ}) + (20 \times 29\text{kJ})$
 - C. $(20 \times 17\text{kJ}) + (20 \times 17\text{kJ}) + (20 \times 38\text{kJ})$
 - D. $(20 \times 17\text{kJ}) + (20 \times 38\text{kJ}) + (20 \times 38\text{kJ})$

3. Which of the following food products is exempted from the nutrition labelling requirements by law?
 - A. biscuits
 - B. tea leaves
 - C. soft drinks
 - D. dairy products

4. Young children who do not get sufficient protein in their diet tend to suffer from a deficiency disease called _____.
 - A. rickets
 - B. pellagra
 - C. kwashiorkor
 - D. night blindness

5. From which of the following proteins is gelatine produced during moist heat cooking of meat?
 - A. elastin
 - B. myosin
 - C. collagen
 - D. myoglobin

6. Which part of a wheat grain is relatively high in vitamin B complex?
 - A. bran
 - B. germ
 - C. endosperm
 - D. aleurone layer

7. At which phase of bacterial growth will the cell population double at a constant rate?
- A. lag phase
 - B. maturing phase
 - C. stationary phase
 - D. exponential phase
8. The reasons for blanching apple slices before freezing are to:
- (1) remove the strong taste
 - (2) whiten the apple slices
 - (3) stop enzymatic reaction
 - (4) soften the fruit for easy packaging
- A. (1) and (2) only
 - B. (2) and (4) only
 - C. (3) and (4) only
 - D. (1), (2) and (3) only
9. The functions of soluble dietary fibre in our body include:
- (1) giving bulk to faeces
 - (2) increasing the viscosity of intestinal content
 - (3) improving glucose tolerance for diabetic patients
 - (4) lowering the rate of nutrient absorption from the stomach and intestine
- A. (1) and (2) only
 - B. (3) and (4) only
 - C. (1), (2) and (4) only
 - D. (2), (3) and (4) only
10. Which of the following is the most appropriate way to defrost 1kg of frozen Vietnamese sausage that is to be served cold?
- A. defrost by microwave oven
 - B. defrost in the refrigerator at approximately 0 - 4°C
 - C. defrost under running water at approximately 15 - 18°C
 - D. defrost at room temperature at approximately 20 - 25°C
11. Nitrite is often used in canned meat products to inhibit the growth of _____.
- A. *Salmonella spp.*
 - B. *Bacillus cereus*
 - C. *Clostridium botulinum*
 - D. *Listeria monocytogenes*

12. Sprouting in potatoes and onions can be prevented by _____.
- A. irradiation
 - B. pasteurisation
 - C. aseptic packaging
 - D. addition of sulfites
13. The main reason for packing a bar of chocolate and some butter cookies for hiking is that
- A. they are tasty and colourful.
 - B. they are compact and high in energy.
 - C. they are rich in minerals and vitamins.
 - D. they are easy to purchase and reasonably priced.
14. The occurrence of the Maillard reaction in the cooking processes is due to
- A. the enzymatic reaction in food.
 - B. the gelatinisation of starch in food.
 - C. the decomposition of lipid in food.
 - D. the condensation reaction between amino acids and sugars in food.
15. Jack lives with his parents, uncle and grandparents together in the same flat. This family structure can be considered as being a _____.
- A. direct family
 - B. nuclear family
 - C. stem family
 - D. collateral family

END OF SECTION A

SECTION B – Design Questions

This section carries 25 marks. Answer ALL questions in this section.

1. A lunch box supplier is requested to provide healthy lunch boxes to a school according to the following specifications:
 - cereals, vegetables and meat in the ratio of 3 : 2 : 1
 - low in unhealthy fats
 - attractive in appearance
 - high in dietary fibre
 - (a) Sketch and label two different design ideas which meet the above specifications. (8 marks)
 - (b) Specify and evaluate one of your design ideas in (a). (4 marks)

2. Strict vegetarians should carefully choose their diet to ensure they are nutritionally balanced.
 - (a) Give two reasons why some people are vegetarians. (2 marks)
 - (b) Why do strict vegetarians tend to consume a great variety of cereals, nuts and beans in their diet? (3 marks)
 - (c) Which mineral and vitamin are likely to be deficient in a strict vegetarian diet? (2 marks)
 - (d) A fifteen-year-old boy is a strict vegetarian. Suggest with reasons a suitable breakfast for him. (4 marks)
 - (e) Vegetarian foods are generally bland in taste. Suggest two ways other than the use of salt to enhance the flavour of vegetarian dishes. (2 marks)

SECTION C – Structured Questions

This section carries 30 marks. Answer ALL questions in this section.

3. A Chinese couple, Amy and Peter have been married for two years. Their first-child was born recently.
- (a) Identify the structure of this family and this milestone in their family life. (2 marks)
 - (b) Discuss the different roles of this family in its kinship system. (8 marks)
- 4.
- (a) What are lipoproteins? (2 marks)
 - (b) How are cholesterol levels in the human body affected by the chemical components of the following food items?
 - (i) apple (3 marks)
 - (ii) hard margarine (3 marks)
 - (c) How are different cholesterol levels associated with coronary heart disease? (4 marks)
- 5.
- (a) Explain what a low carbon diet is and why it is becoming increasingly important. (3 marks)
 - (b) Suggest two food items suitable for a low carbon diet. Explain each of your answers with a different reason. (4 marks)
 - (c) Using one of the food items suggested in (b), name a main dish that meets the requirements of a low carbon diet. (1 mark)

END OF PAPER

PP-DSE
TL (FOOD)

PAPER 2

HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION

StudentBounty.com

PRACTICE PAPER
TECHNOLOGY AND LIVING (FOOD SCIENCE AND TECHNOLOGY)
PAPER 2

(2 hours)

This paper must be answered in English

INSTRUCTIONS

1. This paper consists of **THREE** sections, A, B and C.
2. Attempt any **TWO** sections only and answer **ALL** questions in the chosen sections.
3. Write your answers in the Answer Book. Start each question (not part of a question) on a new page.

SECTION A FOOD CULTURE

Candidates who choose Section A should attempt ALL the questions in this section.

1.
 - (a) Why do some Chinese families have dinner gatherings on Lunar New Year's Eve? (2 marks)
 - (b) Explain the symbolic meanings of three ingredients that are commonly used in dishes served during Lunar New Year. (6 marks)

2.
 - (a) Compare the differences in the cuisine of Beijing and Guangzhou. (8 marks)
 - (b) How can food manufacturers modify traditional mooncakes to address the health concerns of consumers? (3 marks)

3. The following table shows a secondary school's lunch menu.

| Menu A | Menu B | Menu C |
|--------------------------|---|-------------------------------------|
| Chicken Burger | Pork Patty Burger with Thousand Island Sauce | Cream of Chicken Soup |
| Baked Mozzarella Mussels | Pickled Peas and Carrots | Turkey Sandwich with Apple Sauce |
| Cucumber Chunks | Banana | Fresh Baby Carrots |
| Chocolate Cherry Cookies | Cheddar Potato Chips | Unleavened Wholemeal Bread |
| Unleavened Bread | Yeast Fermented Wheat Bread | Soya Milk |
| Milk or Soya Milk | Chocolate Milk | |

Which of the above menus is suitable for the following students? Give two reasons for each of your choice.

- (a) Islamic students (3 marks)
 - (b) Jewish students (3 marks)
4. Give an account of Hong Kong's cosmopolitan food culture in the past two decades. (15 marks)

SECTION B FOOD SCIENCE AND TECHNOLOGY EXTENDED STUDY

Candidates who choose Section B should attempt ALL the questions in this section.

5. Give two physical properties of eggs which explain their wide use in the preparation and cooking of different dishes. Explain your answer with examples. (6 marks)

6. Explain how canning can provide an extended shelf life for food stored at room temperature. (3 marks)

7. In an experiment on the inhibition of enzymatic browning for apples, apples were cut with a stainless steel knife into identical cubes, these were then divided into 3 equal portions, labelled as Samples A, B and C. After the following treatments, the samples were then exposed in the air for sixty minutes. The results are tabulated below:

| Sample | Treatment | Exposure time | | | |
|--------|---|---------------|--------|--------|--------|
| | | 5 min | 10 min | 20 min | 60 min |
| A | No treatment | ++++ | +++++ | +++++ | +++++ |
| B | Soaked in tap water | +++ | ++++ | ++++ | +++++ |
| C | Soaked in a mixture of tap water and fresh lemon juice (volume ratio 1:1) | - | - | - | + |

“+” degree of intensity of browning

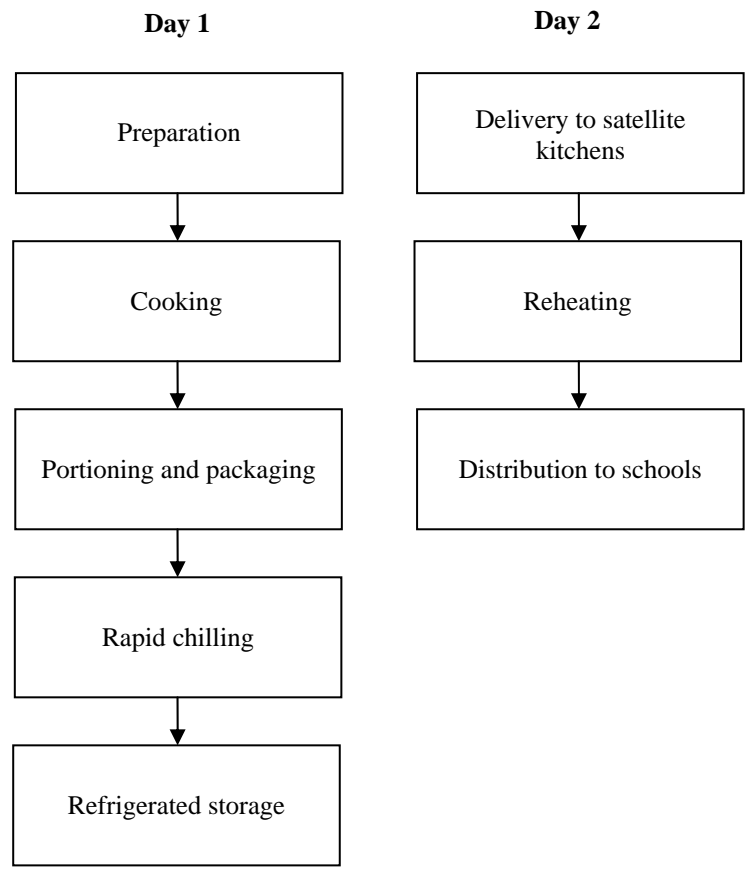
“-” no observable browning

- (a) What is the purpose of setting up Sample A? (1 mark)

- (b) Suggest one other food item and one browning inhibitor to replace the apple and lemon juice used in the above experiment. (2 marks)

- (c) Discuss the differences in the intensity of the browning between Samples B and C. (4 marks)

8. The following flow chart shows the sequence of school lunch box production of a caterer using the cook-chill process.

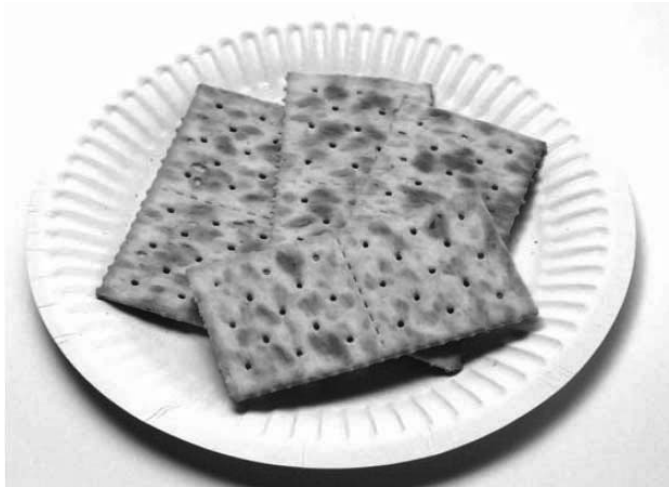


- (a) Identify three critical control points (CCPs) from the above flow chart. Give reasons to support your answers. (6 marks)
 - (b) What are the principles of the cook-chill process? (3 marks)
9. Why are food additives widely used in food industries? Explain your answer with examples. (15 marks)

SECTION C FOOD PRODUCT DEVELOPMENT

Candidates who choose Section C should attempt ALL the questions in this section.

10. (a)



A new type of cracker has been developed by Company X as shown above. Suggest one sensory descriptor for each of the following: (3 marks)

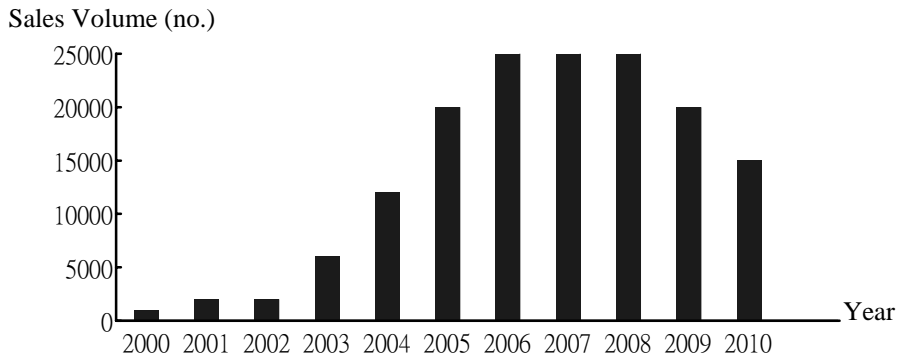
- (i) texture
- (ii) flavour
- (iii) appearance

(b) Company Y has developed a similar product to compete with Company X. Describe an appropriate sensory test to be used by Company Y. (2 marks)

11. A snack targeting the elderly market is to be developed by a food company. What should be considered in formulating this company's marketing plan regarding the "4Ps"? (4 marks)

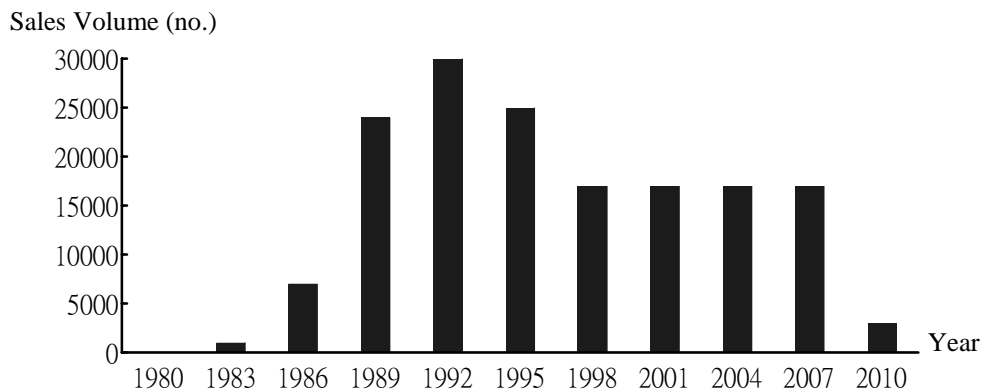
12. Food companies generally keep records of the sales volume of their food and beverage items.

- (a) Suggest why a company needs to keep track of its sales record and how these data can be used. (2 marks)
- (b) Graph A below shows the sales volume of a food item. Identify and explain the various stages of the product life cycle of the item between 2000 and 2010. (9 marks)



Graph A: Sales Volume of a Food Item

- (c) (i) Graph B below shows the sales data of a beverage item produced by a company. Suggest reasons for the sales volume of the beverage item remaining steady from 1998 to 2007. (3 marks)



Graph B: Sales Volume of a Beverage Item

- (ii) What strategies can the company adopt to increase its current sales? (2 marks)

13. Give an account of how the current market trends influence the research and development direction of a food manufacturing company. Explain your answer with examples. (15 marks)

END OF PAPER