

TECHNOLOGY AND LIVING (FOOD SCIENCE & TECHNOLOGY)

PAPER 1

(Sample Paper)

Time allowed: 1½ hours

This paper must be answered in English

1. This paper consists of THREE sections, A, B and C. Section A carries 15 marks. Section B carries 25 marks. Section C carries 30 marks.
2. Attempt ALL questions. Write your answers in the answer book provided.
3. Answers should be presented in an orderly way.
4. Tables and diagrams should be included wherever appropriate.
5. Graph paper and supplementary answer sheets will be supplied on request. Write your candidate number on each sheet, and fasten them with a string inside the answer book.

SECTION A – Multiple Choice Questions

This section carries 15 marks. Answer **ALL** questions in this section.

1. Which of the following are the combinations of symptoms of diverticular disease?
 - (1) abdominal cramps
 - (2) severe constipation
 - (3) rapid weight loss
 - A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

2. Two slices of cheese contain a total of 6.3 gram of protein. The recommended daily intake (RDI) of protein for a 15-year-old girl is 57 grams. What percentage of her RDI would the girl consume if she ate one slice of cheese?
 - A. 0.05%
 - B. 11.0%
 - C. 0.11%
 - D. 5.52%

3. Which of the following processes involves dextrinisation?
 - A. boiling milk and flour to make custard
 - B. beating egg-whites to make meringue
 - C. churning cream to make butter
 - D. toasting bread

4. Which of the following food types was developed in response to nutritional considerations?
 - A. Low alcohol beer and wines
 - B. Low fat, low sugar yoghurt
 - C. Pre-cut packaged vegetables
 - D. Pre-packed frozen meals

5. A person has normal vision in bright conditions but cannot see clearly in dim light. Which of the following vegetables is most effective in helping him to overcome the problem?
 - A. broad bean
 - B. potato
 - C. spinach
 - D. green pepper

6. Which of the following food substances is **not** usually found in pork, milk and egg?
 - A. fat
 - B. protein
 - C. dietary fibre
 - D. mineral salts

7. If the diet of a person is rich in carbohydrates, his body will store the excess carbohydrates as
- (1) fat.
 - (2) starch.
 - (3) glycogen.
- A. (1) and (2) only
 - B. (1) and (3) only
 - C. (2) and (3) only
 - D. (1), (2) and (3)

8. A student mixed a 0.1% amylase solution with a 1% starch solution. He performed a number of food tests on the mixture immediately after mixing and obtained the following results:

| Iodine test | Biuret test | Benedict's test |
|-------------|-------------|-----------------|
| + | + | - |

Key : + positive result
- negative result

If he repeated the food tests on the mixture after 10 minutes later, what would be the possible results?

| | <i>Iodine test</i> | <i>Biuret test</i> | <i>Benedict's test</i> |
|----|--------------------|--------------------|------------------------|
| A. | + | + | + |
| B. | - | + | - |
| C. | - | - | + |
| D. | + | - | - |

9. What is the purpose of setting specifications for new food products?
- A. To assist in the feasibility study
 - B. To enhance product convenience
 - C. To confirm with company image
 - D. To ensure consistent, high quality foods
10. Which one of the following meals contains the most energy-dense foods?
- A. Vegetable noodle soup and a wholemeal bread roll
 - B. A tuna and lettuce salad sandwich
 - C. Pasta with tomato and seafood sauce
 - D. A cheeseburger with potato wedges and salad
11. The glycaemic index is a strategy that guides a person's food choices to reduce the risk of developing
- A. obesity and type II diabetes.
 - B. type I diabetes and cardiovascular disease.
 - C. cardiovascular disease and anaemia
 - D. anaemia and type II diabetes

12. Foods that increase iron absorption include
- A. coffee, milk and apples.
 - B. whole-grain cereal products, bran and nuts.
 - C. berry fruits, broccoli and parsley.
 - D. milk, fish and oranges.
13. Vegans are at risk of being deficient in
- A. folate, protein, and carbohydrates .
 - B. calcium, haem iron and vitamin B₆.
 - C. vitamin B₁₂, hame iron and calcium.
 - D. non-haem iron, protein and calcium.
14. Which of the following groups requires the highest recommended daily intake of iron ?
- A. girls aged 4-7 years
 - B. women aged 55-77 years
 - C. girls aged 7-11 years
 - D. women aged 18-35 years
15. Which of the following food additives is added to margarine during processing to prevents rancidity?
- A. humectants
 - B. antioxidants
 - C. emulsifiers
 - D. thickeners

SECTION B – Design Questions

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

1. In today's fast-paced, fast-food culture, people who are constantly on the go don't have time to eat as healthy as they would like. A food manufacturer has decided to develop a range of healthier alternatives that would be suitable for most fast-food shops.

The specifications for your 'new healthy fast-food' are that it must:

- Be savoury and suitable for vegetarians;
- Be easy to handle and eat without using cutlery;
- Have a good colour through the use of fresh and natural ingredients;
- Be filling and low in fat content.

- (a) Sketch and annotate **TWO** different design ideas for the 'new healthy fast-food' which meet the above specifications. (8 marks)
- (b) Evaluate how well / good one your design ideas fulfill the requirement as a new healthy fast-food. Please specify idea 1 or idea 2. (5 marks)

Total: 13 marks

2. Some mothers are concerned that Hong Kong children often have little choice when buying their lunch at school. Mothers are concerned that there is not enough information to assist them when planning healthy lunches for their children. You have been asked to assist a publicity campaign. You are to develop five days of different lunch box menus that would be suitable for primary children.

- (a) Outline four constraints that would exist in designing these lunch boxes menus. (4 marks)
- (b) List foods suitable for two lunch box menus that would fulfill the requirements. (5 marks)
- (c) Discuss the suitability of one of your menu in relation to the requirement of an obesity student. (3 marks)

Total: 12 marks

SECTION C – Structured Questions

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

1. Recently, many fathers work across border in China every week. Discuss the implications for each member of the family in this situation.
- the father (3 marks)
 - the mother (3 marks)
 - the child (3 marks)

Total: 9 marks

2. Water is the most critical nutrient in the diet, though it does not provide energy.
- (a) List the health problems that may result if insufficient water is consumed. (2 marks)
- (b) Explain the formation of metabolic water. (3 marks)
- (c) Although by World Health Organization standards Hong Kong water is safe to drink, the consumption of bottled water in Hong Kong has continued to increase. Suggest two reasons for this. (4 marks)

Total: 9 marks

3. Before a successful new food product can be developed, the food technologist must understand the properties and working characteristics of different ingredients and how they work together so that correct choices can be made.
- (a) Define raw and processed foods and give **ONE** example of each. (4 marks)
- (b) Eggs are very versatile and have useful properties which can be used in different ways for food design. Illustrate **TWO** functional properties of eggs in food preparation with **ONE** example each. (4 marks)
- (c) List **TWO** ways of glazing food products and give an example of the use of each. (4 marks)

Total: 12 marks

END OF PAPER