



Cambridge International A Level

FOOD STUDIES

9336/01

Paper 1 Theory

October/November 2024

3 hours



You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **four** questions in total:
 - Section A: answer **two** questions.
 - Section B: answer **two** questions.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.

INFORMATION

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [].

This document has **8** pages. Any blank pages are indicated.

Section A

Answer **two** questions.

- 1 (a) Describe the process of oil hydrogenation. [2]
- (b) (i) Describe the chemical structure of *cis*- and *trans*-fatty acids. Include diagrams in your answer. [4]
- (ii) State **two** functions of a stabiliser in the production of a low-fat spread. [2]
- (c) Name **one** essential fatty acid and **one** good food source for this named fatty acid. [2]
- (d) Explain why fat used for deep-fat frying should be replaced regularly. [4]
- (e) Describe the condition hypervitaminosis A. Identify **four** symptoms of this condition. [4]
- (f) Explain the functions of fat in the diet. [6]
- (g) State the energy yielded by 1 g of glucose. [1]
- [Total: 25]
- 2 (a) (i) Name the **two** monosaccharides that form sucrose. [1]
- (ii) Draw the structure of **one** of the monosaccharides named in (a)(i). [1]
- (iii) Describe the chemical structure of an oligosaccharide. [3]
- (iv) Name **one** oligosaccharide and **one** good food source for this named oligosaccharide. [2]
- (b) (i) Explain how sugar crystallisation can occur when making caramel. [3]
- (ii) Suggest **three** ways to reduce the risk of sugar crystallisation when making caramel. [3]
- (c) (i) Name **two** chemicals found in foods that reduce the absorption of iron in the body. [1]
- (ii) Explain why a vegan may absorb less iron than a meat eater. [3]
- (d) (i) Define the term *basal metabolic rate (BMR)*. [1]
- (ii) Explain **four** factors that influence an individual's basal metabolic rate (BMR). [4]

(e) Kwashiorkor and marasmus are two forms of malnutrition.

(i) Identify the causes of kwashiorkor and marasmus. [1]

(ii) Identify **two** distinct symptoms for each of the conditions. [2]

[Total: 25]

- 3 (a) Describe the chemical digestion of the macronutrients in milk. Include the location for each stage of milk digestion. [9]
- (b) Explain how lactose intolerance leads to defective absorption. [3]
- (c) Explain why osteoporosis is a condition that is common in people who are lactose intolerant. [2]
- (d) The following minerals are needed by the body in small quantities.
- potassium sodium fluoride chloride
- For each of these minerals:
- (i) Name **two** different good food sources. [4]
- (ii) Identify **one** symptom if excess is consumed. [4]
- (e) Explain why apples go brown when cut and not used straight away. [3]

[Total: 25]

- 4 (a) Define the term *dehydration*. [1]
- (b) Give the chemical equation for cellular respiration. [2]
- (c) Describe how metabolic water is produced by the body. [2]
- (d) Describe the chemical structure of a secondary protein. Include diagrams in your answer. [6]
- (e) Explain **four** ways meat can be tenderised. [8]
- (f) (i) Define the term *deamination*. [2]
- (ii) Identify **three** differences between deamination and transamination. [3]
- (g) State the Dietary Reference Value (DRV) of saturated fats for an adult. [1]

[Total: 25]

Section B

Answer **two** questions.

- 5 (a) Tomato sauce is used when making pizza. Give the recipe and method for making a smooth tomato sauce using fresh tomatoes. [4]
- (b) Identify, with reasons, how to safely store canned foods at home. [3]
- (c) Compare and contrast dehydration with accelerated freeze-drying as methods of food preservation. [5]
- (d) State **two** advantages and **two** disadvantages of genetically modified (GM) food. [4]
- (e) Explain the functions of eggs in a creamed cake mixture. [5]
- (f) Nutrition is an important factor to consider when planning meals. Other than nutrition, identify and explain **four** different factors to consider when planning meals. [4]

[Total: 25]

- 6 (a) Describe the stages involved in the cook-chill process. Include details of how cook-chill products should be stored and used. [6]
- (b) Define the term *modified atmosphere packaging* (MAP). Explain how MAP extends the shelf life of food. [3]
- (c) Describe the characteristics of *Clostridium perfringens* and explain how it causes food poisoning. [6]
- (d) (i) Describe how a microwave oven heats food. Name the method of heat transfer. [4]
- (ii) Instructions for reheating a meal in a microwave oven include this step:

Stand for 1 minute before serving.

Explain how standing time can help promote food safety. [2]

- (e) Identify, with reasons, **four** factors to consider when choosing a freezer. [4]

[Total: 25]

- 7 (a) Describe the process of tempeh production. [3]
- (b) (i) Explain why white strong plain flour is used to make puff pastry. [4]
- (ii) Describe the changes to puff pastry during baking. [5]
- (iii) State **two** reasons why frozen puff pastry is a popular alternative to homemade puff pastry. [2]
- (c) Explain, with examples, **six** reasons for cooking food. [6]
- (d) (i) Define the term *kitchen work triangle*. [1]
- (ii) Describe factors to consider when planning a kitchen to help ensure personal safety. [4]
- [Total: 25]

- 8 (a) Fruits can be classified as pomes, drupes and berries.
Define each classification. [3]
- (b) Describe the function of pectin in:
- (i) the diet [1]
- (ii) jam making [1]
- (iii) yogurt making. [2]
- (c) Describe the process of yogurt making. [4]
- (d) *Factory farming is neither ethical nor sustainable.*
Discuss this statement. [8]
- (e) Outline how beta-glucans can benefit the body. [2]
- (f) Suggest ways to be economical when cooking food in an oven. [4]
- [Total: 25]

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