



Cambridge International A Level

FOOD STUDIES

9336/01

Paper 1 Theory

October/November 2023

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) The fat and protein in cheese can be difficult to digest. Describe the chemical breakdown of fats and proteins from cheese. In your answer, consider the mouth, the stomach and the ileum. [8]
- (b) Explain what is meant by the secondary and tertiary structures of proteins. [5]
- (c) (i) Phenylalanine is an essential amino acid.
Give the meaning of the term *essential amino acid*. [1]
- (ii) Explain why some people should **not** eat foods containing phenylalanine. [3]
- (iii) Identify **two** different foods that contain phenylalanine. [1]
- (d) Explain why liver is a good source of some vitamins. [3]
- (e) Some foods are fortified to make them have a large amount of a particular nutrient. Suggest a different nutrient that could be added to the foods listed in the table.

food	nutrient
orange juice	(i)
margarine	(ii)
breakfast cereal	(iii)
white flour	(iv)

[2]

- (f) Explain why the foods in (e) are often fortified, and why other foods are not fortified. [2]

[Total: 25]

- 2 (a) Table sugar is a carbohydrate. With the aid of a diagram, describe the chemical structure of table sugar. [6]
- (b) Complete the statement.
- Lactose is a disaccharide that is made up of one unit of (i) and one unit of (ii) It is hydrolysed by the enzyme (iii) [2]
- (c) Explain how cellulose, as an unavailable carbohydrate, is able to release some energy in the body. [2]

- (d) Identify, with different reasons, **four** features of a healthy diet. [4]
- (e) Vitamin B₁₂ is absorbed in the ileum.
- (i) Draw a labelled diagram showing the lining of the ileum. [4]
- (ii) Identify **two** good food sources of vitamin B₁₂. [1]
- (f) (i) A lack of iron can cause anaemia. Identify **one** vitamin that can cause anaemia if intake of it is low. [1]
- (ii) Define the term *megaloblast*. [2]
- (g) With the exception of energy, Reference Daily Intake (RDI) values are always greater than the requirement. Explain this for energy RDI values **and** other RDI values. [3]

[Total: 25]

- 3 (a) Hypertension is a condition of the body.
- (i) Define the term *hypertension*, and explain how it occurs. [3]
- (ii) Identify **two** symptoms of hypertension. [1]
- (iii) Identify **two** different foods that should be reduced in the diet to avoid hypertension. [1]
- (b) Explain **three** different ways that eating fruit and vegetables may play an important role in preventing coronary heart disease (CHD). [9]
- (c) Outline the functions of the trace element copper in the body. [2]
- (d) Identify how energy content is expressed in the nutritional information on food labelling. [1]
- (e) (i) Identify **two** acids that can hinder the absorption of **two** named minerals. Explain how absorption is hindered by **each** of these two acids. [6]
- (ii) Identify **one** food source for **each** of the acids named in (e)(i). [2]

[Total: 25]

- 4 (a) Compare and contrast the chemical properties of butter and margarine. [8]
- (b) State the Reference Daily Intake (RDI) for adults and children under 10 years of:
- (i) non-starch polysaccharides (NSP) [2]
 - (ii) sodium. [2]
- (c) Transamination is a chemical process carried out by the body. Describe how, and explain why, this process occurs. [5]
- (d) Define the term *glycolysis*. [4]
- (e) (i) Describe and explain the effects on the body of consuming too much water too quickly. [3]
- (ii) Define the term *water balance*. [1]

[Total: 25]

Section B

Answer **two** questions.

- 5 (a) Explain why a beef steak can be eaten after minimal cooking, but meat products like burgers and sausages should be thoroughly cooked. [6]
- (b) Meat can be classified into five groups. Identify **three** of these groups. Give a named example of meat from each of these **three** named groups. [3]
- (c) Explain why living in a country that relies on imported food can be a concern for the population. [4]
- (d) Sucrose, fructose, lactose and maltose are commonly seen names of sugar on food labels. Give **two** other names that can be used for sugar on food labels. [2]
- (e) Identify, with reasons, points that should be considered when planning and serving meals for the elderly. [6]
- (f) Insects, rodents and birds can infect stored foods. Explain how this may affect human health. [4]

[Total: 25]

- 6 (a) Outline the advantages and disadvantages of using a refrigerator for food preservation. [8]
- (b) (i) Reducing the temperature of foods and drying foods are two methods of preservation. Identify **three** other methods of preservation. Give an example of food preserved by each of these **three** methods. [3]
- (ii) Explain why 100g of sun-dried tomatoes contain 15 times more calories than 100g of fresh tomatoes. [2]
- (c) Describe the characteristics of *Bacillus cereus* and explain how this bacteria causes food poisoning. [5]
- (d) Describe how light can cause the decomposition of foods. Identify **two** foods that are prone to damage by light and describe how they are damaged. [4]
- (e) The ingredients for a bottle of salad dressing include the additives ascorbic acid, sodium benzoate and soy lecithin. Identify a different reason for the use of **each** of these **three** additives. [3]

[Total: 25]

- 7 (a) (i) Identify **three** non-nutritional reasons why a vegetarian diet could be preferable during pregnancy. [3]
- (ii) Identify **six** nutrients that a woman should increase her intake of during pregnancy. Give reasons why. [6]
- (b) (i) Explain the importance of prebiotic foods in the diet. [2]
- (ii) Identify **four** prebiotic foods. [2]
- (c) State how much fat is needed to make each type of pastry shown in the table.

type of pastry	amount of fat/g	amount of plain flour/g
choux pastry	(i)	65 g
flaky pastry	(ii)	200 g
shortcrust pastry	(iii)	100 g

[3]

- (d) Supermarkets sell many different types of convenience foods.
- (i) Identify, with examples, **two** different types of frozen convenience foods. [2]
- (ii) Identify, with examples, **two** different types of dried convenience foods. [2]
- (e) The table shows four materials that can be used for a kitchen work surface. Choose **one** material and explain why you think it is a better choice than the other three materials.

wood	stainless steel	granite	food grade plastic
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[5]

[Total: 25]

- 8 (a) Cheese is often used to add flavour and colour to a coating sauce.

Complete the following list of ingredients and quantities for a cheese sauce recipe.

50 g butter

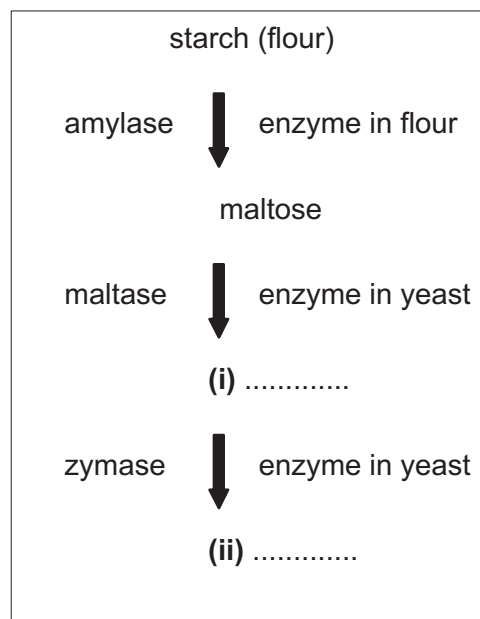
100 g cheddar cheese

(i) plain flour

(ii) 500 ml

[1]

- (b) Describe the process and changes that take place when making a cheese sauce by the roux method. [5]
- (c) Explain the purpose of the kneading process in bread making. [5]
- (d) The flowchart shows the enzyme reactions that occur when making bread dough. Complete the flowchart.



[2]

- (e) Describe and explain the effect of heat from the oven on bread dough. [5]
- (f) (i) Sauerkraut, fufu, lassi and miso rely on microorganisms for their preparation. Explain why these foods have a long shelf life. [3]
- (ii) Besides sauerkraut, fufu, lassi and miso, identify **one** other food that relies on microorganisms for its preparation. [1]
- (g) Explain why fruits sweeten and soften as they ripen. [3]

[Total: 25]

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