

Section A

Answer **two** questions.

- 1 (a) Explain the importance of calcium to the heart. [2]
- (b) (i) Supermarket chicken is often high in sodium. Excluding sodium, list **six** other nutrients that are contained in a skinless chicken breast and identify **one** function of each nutrient. [6]
- (ii) Explain why supermarket chicken is high in sodium. [1]
- (c) Haem is the prosthetic group of the enzyme catalase. Explain what is meant by the term prosthetic group. [3]
- (d) (i) Draw and label a diagram to show the structure of an intestinal villus. [4]
- (ii) Explain the importance of the shape of a villus. [2]
- (e) Explain why children who have coeliac disease do not grow as expected. [4]
- (f) (i) A restaurant serves a bowl of fruit salad covered in pouring cream from a chilled counter. The customer complains that the cream has lumps in it. Explain why the cream has lumps in it. [2]
- (ii) Suggest an alternative way to serve the dessert that will avoid lumps in the cream. [1]

[Total: 25]

- 2 (a) Cheese has very low amounts of the amino acid methionine. Explain why this could be a nutritional problem for a vegetarian child. [4]
- (b) The large intestine contains enzymes that humans are unable to synthesise. Explain how and why these enzymes are found in the large intestine. [2]
- (c) (i) Identify the trace element that is present in vitamin B12. [1]
- (ii) Identify **two** foods that are good sources of this element. [1]
- (d) Identify and explain the causes of the decomposition of fats and oils. [6]
- (e) Deamination in the liver is a necessary process. Explain the process and why it is needed. [3]
- (f) (i) Identify **two** important roles of vitamin K in the body. [2]
- (ii) Explain the importance of vitamin E to the body. [3]
- (iii) Explain why people who live in the Northern hemisphere should eat more foods rich in vitamin D in the winter months. [3]

[Total: 25]

- 3 (a) Explain the term refined carbohydrate. Give **two** examples of refined carbohydrates. [3]
- (b) Explain why milk becomes a solid during digestion in the stomach. [2]
- (c) (i) Identify **one** function of the trace element selenium in the body. [1]
- (ii) Identify **two** foods that are rich in selenium. [1]
- (d) Explain how metabolic water is formed and identify where this occurs in the body. [3]
- (e) Discuss the factors that affect the dietary needs of adolescents. [6]
- (f) Verbascose is an oligosaccharide. Identify **one** other oligosaccharide and identify the uses of oligosaccharides in the body. [4]
- (g) Describe the benefits of the partial hydrogenation of vegetable oil into vegetable fat. [5]

[Total: 25]

- 4 (a) (i) Define the term serum cholesterol. [1]
- (ii) Describe the appearance and structure of cholesterol and identify its functions in the body. [4]
- (b) Explain how jam thickens. [5]
- (c) Define the term Dietary Reference Value (DRV) and explain the importance of Dietary Reference Values to consumers. [3]
- (d) (i) Identify the vitamin that is needed by the body to produce collagen. [1]
- (ii) Identify **four** symptoms of a lack of collagen production in the body. [4]
- (e) (i) Define the term reducing sugar. [2]
- (ii) Fructose is a reducing sugar. Identify **one** other example of a reducing sugar. [1]
- (iii) Using a diagram, give the chemical structure of a unit of fructose. [2]
- (f) Explain why the basal metabolic rates of ten-year-old identical twins might be different. [2]

[Total: 25]

Section B

Answer **two** questions.

- 5 (a) Explain why the rate at which vegetables are frozen is important. [8]
- (b) Explain how pickling can be used to preserve vegetables. [2]
- (c) Microorganisms show different characteristics.
- (i) State **one** type of microorganism that have flagella. [1]
- (ii) State **one** type of microorganism that have mycelia. [1]
- (iii) State **one** type of microorganism that are cocci. [1]
- (d) (i) Enzymic browning occurs in fruit and vegetables that are cut or damaged. Identify **two** other browning reactions in foods and explain how they occur. [6]
- (ii) Explain the importance to the consumer of **one** of the browning reactions identified. [2]
- (e) Give **eight** pieces of advice on how to use an electric food processor safely. [4]

[Total: 25]

- 6 (a) (i) Some food-poisoning bacteria are described as anaerobic and spore forming. Identify **two** food-poisoning bacteria that can be described in this way. [2]
- (ii) Explain the terms anaerobic and spore forming in relation to bacteria. [2]
- (iii) Explain the term toxic food poisoning. [3]
- (b) Explain the term hot holding. [4]
- (c) (i) The ingredients for a pack of dried fruits are shown on the box. Identify the reason for adding sulfur dioxide (E220). [1]

Ingredients: raisins, currants, orange peel, lemon peel, glucose syrup, sulfur dioxide (E220)

- (ii) Discuss the advantages and disadvantages of using food additives. [8]
- (d) Identify a hard cheese. Describe the production of a hard cheese. [5]

[Total: 25]

- 7 (a) Suggest a suitable cooking temperature for **each** of the following foods.
- Victoria sandwich cake
 - meringue
 - deep-fried potatoes
 - bread
- [2]
- (b) (i) The whipped cream on the top of a family-sized dessert has become contaminated with *Salmonella* food-poisoning bacteria. Explain how this could have occurred. [3]
- (ii) All the family eat the contaminated dessert but only one person becomes ill. Explain **two** possible reasons why only one person became ill. [4]
- (c) Explain what is meant by the term blended sauce. [3]
- (d) Identify **four** improvements that scientists are hoping to achieve when they genetically modify food crops. [4]
- (e) During transportation, time can be a factor in the deterioration of some foods. Identify and explain other important factors that should be considered when transporting food items to minimise deterioration and damage. [9]
- [Total: 25]

- 8 (a) Explain why a whole chicken should be completely thawed before roasting. [3]
- (b) (i) Identify **two** pastries from the boxes that use steam as the raising agent. [1]
- | | | | |
|--------------|-------------------|-------------|--------------|
| flaky pastry | shortcrust pastry | filo pastry | choux pastry |
|--------------|-------------------|-------------|--------------|
- (ii) Identify **one** other baked food product that uses steam as the raising agent. [1]
- (c) Explain how a low income affects meal planning. [6]
- (d) Explain why careful planning is needed when designing the layout of a kitchen. [5]
- (e) Some people believe that importing food from other countries should be discontinued. Discuss. [9]
- [Total: 25]

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.