

354/02

DESIGN AND TECHNOLOGY

FOOD TECHNOLOGY DT4

P.M. TUESDAY, 19 June 2007

(3 Hours)

ADDITIONAL MATERIALS

In addition to this examination paper, you will need a 12 page answer book.

INSTRUCTIONS TO CANDIDATES

Answer **three** questions from Section A.

Answer **four** questions from Section B.

Answer **two** questions from Section C.

INFORMATION FOR CANDIDATES

When and where appropriate, answers should be amplified and illustrated with sketches and/or diagrams.

Section A and **Section B** answers should be no more than half a page. These sections are designed to demonstrate your **breadth** of knowledge in Food Technology.

Your **Section C** answers should be substantial and demonstrate your **depth** of knowledge in Food Technology.

Candidates are reminded of the necessity for good English and orderly presentation in their answers.

SECTION A

Answer **three** questions from this section.

The maximum length of each answer should be no more than about 150 words.
This section is designed to demonstrate your **breadth** of knowledge in Food Technology.

Each question carries 8 marks.

1. (a) State the causes of **one** named type of food poisoning. [2]
(b) Outline methods used by manufacturers to reduce the risk of food poisoning. [6]

2. (a) Describe the *product life cycle*, using diagrams where relevant. [4]
(b) Draw a labelled diagram demonstrating the life cycle of a food product with a slow rate of adoption. [4]

3. Statistics show that there is an increase in the number of people diagnosed as a coeliac or diabetic.
(a) Explain the special dietary needs of **one** of these groups. [3]
(b) Explain how named food products have been modified to suit this group. [5]

4. (a) Describe how wheat is milled into flour. [4]
(b) Outline the health benefits of eating wholegrain cereals. [4]

5. When researching the market prior to product development explain the importance of:
(a) the target audience; [4]
(b) market trends. [4]

SECTION B

Answer **four** questions from this section.

The maximum length of each answer should be no more than about 150 words.
This section is designed to demonstrate your **breadth** of knowledge in Food Technology.

Each question carries 8 marks.

6. The visual consistency of food products is very important.
Outline methods food manufacturers use to maintain the visual consistency of named food products. [8]
7. Name **four** smart food materials and describe the characteristics which enable them to be classified as *SMART*. $4 \times [2]$
8. Vitamin loss can occur during the processing of some foods. Outline how this problem can be overcome. [8]
9. Sugars have a number of properties used in food production. Explain how **two** properties of sugars are used in the manufacture of specific named food products. $2 \times [4]$
10. Locally sourced foods are becoming more widely available in the shops.
Discuss the reasons for this trend. [8]
11. For **one** named process in the manufacture of a named food product:
- (a) describe how it would be done in the classroom; [2]
 - (b) describe how it would be done during larger scale production; [2]
 - (c) evaluate **each** of these methods. $2 \times [2]$

SECTION C

Answer **two** questions from this section.

Your answers should be substantial and show the **depth** of your knowledge in Food Technology.

Each question carries 22 marks, 2 of which are for clarity of communication.

- 12.** Environmental issues frequently receive media attention. Discuss ways food designers and manufacturers have changed food products and packaging to make them more environmentally friendly. [22]
- 13.** There is a growing market for fortified, probiotic and nutraceutical food products. Using examples of named food products:
- (a) explain the meaning of **each** of these terms; 3 × [3]
- (b) discuss claims made by the producers of these products. [11]
- Clarity of communication* [2]
- 14.** Outline the factors to be considered when designing food products for children. [22]
- 15.** The *Four Ps* are features which can have a significant impact when selling products in the market place.
- Describe the essential features of **each** of the *Four Ps* and relate them to a food product of your choice. Indicate how **each** influences the marketability of the product. [22]
- 16.** Manufacturers often wish to maximise the shelf-life of their food products.
- (a) Outline the benefits to the manufacturer of producing food products with a longer shelf-life. [4]
- (b) Describe **two** different methods manufacturers use to extend the shelf-life of food products, stating **two** advantages and **two** disadvantages of **each**. 2 × [8]
- Clarity of communication* [2]