

354/02

DESIGN AND TECHNOLOGY

FOOD TECHNOLOGY DT4

P.M. TUESDAY, 20 June 2006

(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. Irradiation is used to extend the shelf-life of some food products.
 - (a) Explain how irradiation extends shelf-life, using examples of named food products. [6]
 - (b) Outline **one** reason why consumers may choose to avoid foods that have been irradiated. [2]

2. Outline the factors that govern the price that a product is sold at in the market-place. [8]

3. Using specific examples, describe how computerised control systems are used when manufacturing food products. [8]

4.
 - (a) Describe the important features of a design specification. [4]
 - (b) Explain how a design specification is used to guide designing. [4]

5. The design and manufacture of food products are influenced by a number of factors.
Outline how *environmental* and *moral* factors can affect the design and manufacture of food products. [8]

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.** Describe the advantages and disadvantages of using standardised components within the manufacture of food products. [8]
- 7.** Postal questionnaires are a market research technique involving no personal contact.
Explain **four** limitations of this technique. 4 × [2]
- 8.** Sensory analysis is used during the development of food products.
- (a) Describe how to carry out **one** named sensory analysis test. [4]
- (b) State **two** important controls that would be followed when carrying out sensory analysis, giving a reason for **each**. [4]
- 9.** (a) Describe the nutritional functions of protein within the body. [3]
- (b) Explain the meaning of the term *biological value*, using examples of named foods. [5]
- 10.** Using examples, describe how a designer of food products might make use of Dietary Reference Values (DRVs) to design and market products for particular groups of people. [8]
- 11.** Smart food materials are now used extensively in manufactured foods.
Evaluate the use of **two** named Smart food materials. 2 × [4]

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.** Celebrity chefs, restaurateurs and food writers frequently influence food trends and the design of food products.

Evaluate how **two** celebrity chefs, restaurateurs or food writers have influenced food trends and the design of particular food products. 2 × [10]

Clarity of communication [2]

- 13.** An increasingly wide range of frozen food products is available to the consumer.

Evaluate frozen food products, from the view of both the consumer and the manufacturer. [22]

- 14.** Discuss how food hygiene legislation helps control the production, packaging, storage and distribution of food products. [22]

- 15.** Quality Control and Quality Assurance are important factors to be considered when manufacturing food products.

(a) Describe how Quality Control and Quality Assurance procedures are used by food manufacturers. [10]

(b) Devise a Quality Control and Quality Assurance procedure for a named food product. [10]

Clarity of communication [2]

- 16.** Flours and other cereals have a number of properties which are utilised by food manufacturers.

Describe in detail **two** of these properties and explain how these properties are utilised in the manufacture of named food products. 2 × [10]

Clarity of communication [2]