



GCE AS/A level

1111/02

DESIGN AND TECHNOLOGY – DT1
Food Technology

A.M. TUESDAY, 14 May 2013

2 hours

ADDITIONAL MATERIALS

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

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Answer **five** questions from Section A.

Answer **one** question from Section B.

INFORMATION FOR CANDIDATES

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

Section A is designed to demonstrate your **breadth** of knowledge in Food Technology.

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

You are reminded that assessment will take into account the quality of written communication used in answers that involve extended writing (**Section B**).

SECTION A

Answer **five** questions from this section.

This section is designed to demonstrate your **breadth** of knowledge in Food Technology.

Each question carries 8 marks.

1. (a) Explain the meaning of the term 'cross-contamination'. [2]
(b) Describe **three** measures taken by food manufacturers to prevent cross-contamination. 3 × [2]

2. Explain the main purposes of:
(a) design specifications; [4]
(b) manufacturing specifications. [4]

3. Problem solving strategies are used by food technologists to initiate design ideas.
Describe **two** problem solving strategies from the following:
inversion, morphological analysis, lateral thinking, brainstorming. 2 × [4]

4. Explain how a named food product of your choice can be adapted to:
(a) improve its nutritional content; [4]
(b) reduce its cost. [4]

5. The development of a new food product involves a number of stages.

Discuss the value of producing prototypes as part of the process of food product development. [8]

6. Outline the ways in which manufacturers maintain the consistent quality of food products within large-scale manufacturing. [8]

7. Sensory analysis tests are carried out in food technology classrooms as well as in industry.

(a) Name and briefly describe **two** specific sensory analysis tests with which you are familiar. $2 \times [2]$

(b) Outline **four** criteria which ensure that tests are carried out fairly. $4 \times [1]$

8. Qualitative testing and quantitative testing must be considered when selecting materials and processes for the design and manufacture of food products.

Explain what you understand by **both** qualitative testing and quantitative testing in relation to specific food products. $2 \times [4]$

SECTION B

*Answer **one** question from this section.*

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

Each question carries 30 marks.

- 9.** The key input of the product champion and the entrepreneur are essential to the development of innovative food products.

Discuss the role of a product champion and an entrepreneur in ensuring the development and success of a food product or range of food products. [30]

- 10.** Food technologists and manufacturers have to consider manufacturing methods, product life and environmental factors when designing and manufacturing food products.

Discuss all elements of the above statement with reference to named food products. [30]

- 11.** Describe the properties and characteristics of **two** named food materials of your choice and explain how these are effectively utilised within named food products. [30]