



GCE A level

354/02

**DESIGN AND TECHNOLOGY
FOOD TECHNOLOGY DT4**

A.M. FRIDAY, 13 June 2008

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. Yeast, enzymes, moulds and bacteria can all be used in food production.
Explain why **two** of these are used in the production of named food products. 2 x [4]

2. Additives are widely used in the food industry.
Outline the advantages and disadvantages to the manufacturer of using **two** named types of food additives. 2 x [4]

3. Describe the importance of :
(a) technology push
and
(b) market pull
as driving forces for the development of new food products. 2 x [4]

4. Food products themselves, not just their packaging, must become more environmentally friendly.
Outline how food products can be manufactured and retailed in a more environmentally friendly way. [8]

5. Outline the factors which influence the success of a food product when purchasing decisions are being made by the consumer. [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.** *Extrusion* and *enrobing* are widely used in the food industry. For **one** of these:
- (a) Describe the process, using examples of specific named food products. [3]
- (b) Outline how manufacturers ensure consistent quality when producing foods using this method. [5]
- 7.** Socio-economic changes have led to an increase in the number of single portion food products being produced.
- (a) Discuss the reasons for this increase. [4]
- (b) Describe the implications for the manufacturer and the retailer. [4]
- 8.** Brainstorming is one of a number of problem solving strategies which can be used by food product designers.
- (a) Describe **a different** problem solving strategy with which you are familiar. [4]
- (b) Evaluate its use as an effective tool. [4]
- 9.** (a) For **two** named vitamins, describe their main functions in the body. 2 x [2]
- (b) Why are some food products fortified? [4]
- 10.** Outline the procedures used by food manufacturers to ensure that food is produced safely. [8]
- 11.** Describe, with examples, the properties which enable certain food materials to be classified as SMART. [8]

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.** When designing packaging for a food product, a wide range of factors must be considered.

Outline the main considerations when designing a package for a named food product of your choice. [22]

- 13.** (a) Give a detailed description of the product life cycle for a specific named food product that has been through a process of frequent revitalisation. [10]
- (b) Describe the impact that this type of product life cycle has on the designer and on the manufacturer. [10]

Clarity of communication. [2]

- 14.** Preserving food can alter its physical, sensory and nutritional properties.

Discuss the effects of preservation on the physical, sensory and nutritional properties of foods, using specific examples. [22]

- 15.** Give a detailed description of the properties and characteristics of **two** specific named food materials that you have used in your design studies. Explain your reasons for selecting each material. [22]

- 16.** The Vegetarian Society estimates that the number of vegetarians in Britain today has increased to approximately 5%.

(a) Discuss the reasons for an increase in the number of vegetarians in Britain. [6]

(b) Outline the dietary restrictions of vegetarian diets and explain how the nutritional needs of vegetarians can be met. [14]

Clarity of communication. [2]