



**GCE A level**

1113/02



S16-1113-02

**DESIGN AND TECHNOLOGY – DT3**

**Food Technology**

A.M. FRIDAY, 10 June 2016

2 hours 30 minutes

### **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 **three** questions from Section A.

Answer **three** 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 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.

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

**Each question carries 8 marks.**

1. Evaluate the use of packaging as a marketing tool for both economy and luxury food products. [8]

2. Salmonella, Staphylococcus, E. Coli and Clostridium are examples of micro-organisms which can threaten food safety.

For any **one** of these:

- (a) outline the main source of infection; [3]

- (b) describe precautions taken by food manufacturers to avoid contamination. [5]

3. ICT is used extensively in the design and manufacture of food products.

Explain the benefits of ICT in:

- (a) nutritional analysis during the development of food products; [4]

- (b) stock control during the manufacture of food products. [4]

4. UHT (Ultra heat treatment) processing is used as a method of preservation for milk.

- (a) Briefly outline the process of UHT. [2]

- (b) Describe the effect on microbial levels and shelf-life. [3]

- (c) Evaluate the effect on the sensory and nutritional properties. [3]

5. (a) Outline the main requirements placed on food businesses by the 1990 Food Safety Act. [4]

- (b) Describe **four** actions available to the enforcement authorities if food businesses fail to meet these requirements. 4 x [1]

**SECTION B**

Answer **three** questions from this section.

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

**Each question carries 8 marks.**

6. Explain what you understand by qualitative and quantitative testing in relation to the selection of food materials. [8]
7. Describe the important features of a design process used to design and make successful food products. [8]
8. Outline the advantages and disadvantages of one-off production to the manufacturer of a named food product. [8]
9. A food technologist may choose to use a particular fat in a product, based on a number of factors.
- (a) Outline the nutritional characteristics of **two** different named fats. 2 x [2]
- (b) For any **one** of these fats, describe **two** properties which make it suitable for use in particular food products. 2 x [2]
10. Evaluate the use of **one** specific SMART food material in named food products. [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 26 marks.***

- 11.** The price charged for a food product is not simply based on the costs of production.  
Discuss the factors which influence how the prices of food products are determined. [26]
  
- 12.** Discuss the reasons why food technologists and manufacturers aim to achieve maximum vitamin and mineral content in food products and describe the possible methods used to achieve this. [26]
  
- 13.** Discuss how food products have been adapted to meet the specific needs of a range of target markets. [26]
  
- 14.** Discuss the factors to be considered when designing and manufacturing sustainable food products. [26]
  
- 15.** Describe the processes of quality control and quality assurance and discuss their importance to the food manufacturer, consumer and the environment. [26]

**END OF PAPER**