



General Certificate of Education
Advanced Level Examination
June 2014

Design and Technology: Food Technology

FOOD3

Unit 3 Design and Manufacture

Tuesday 3 June 2014 9.00 am to 11.00am

For this paper you must have:

- normal writing and drawing instruments
- an AQA 12-page lined answer book which is provided separately.

Time allowed

- 2 hours

Instructions

- Use black ink or black ball-point pen. Use pencil and coloured pencils only for drawing.
- Write the information required on the front of your answer book. The **Paper Reference** is FOOD3.
- Answer **three** questions.
- Answer **one** question from **each** of Sections 1 and 2 and **one other** question from **either** section.
- If you choose to answer a question which has several parts, you should answer **all** parts of this question.
- Do all rough work in your answer book. Cross through any work that you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 84.
- There are 28 marks for each question.
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Advice

- Illustrate your answers with sketches and/or diagrams wherever you think it is appropriate.

Answer **three** questions.

Answer **one** question from each of Sections 1 and 2 and **one** other question from either section.

For each question that you answer, you should answer all parts of that question.

Section 1

Question 1

0 1 In order to reduce the health problems associated with obesity it has been suggested that the price of 'unhealthy' foods is increased. This has become known as 'the fat tax'. To what extent do you think that this would be an effective way of improving the health of the United Kingdom?

[10 marks]

0 2 Describe how Quorn is made.

[6 marks]

0 3 Name **six** micro nutrients found in Quorn.

[6 marks]

0 4 Explain why microbial risk assessments have to be carried out in food production.

[6 marks]

Question 2

0 5 Explain, in terms of food science, the working characteristics of ingredients when producing the following:

- cheese sauce made by the roux method
- choux pastry
- Victoria sandwich cake.

[3 × 6 marks]

0 6 Explain the term 'complementation of proteins'. Give specific examples in your answer.

[6 marks]

0 7 Explain why the following are used in food manufacture:

- anti-foaming agents
- anti-caking agents.

[2 × 2 marks]

Question 3

0 8 With the aid of diagrams, describe the basic chemical structure of the following:

- amino acids
- fatty acids
- **either** alpha **or** beta glucose.

[3 × 4 marks]

0 9 Look at the menu below:

Cream of tomato soup
Shepherd's pie with mashed potatoes, honey glazed carrots, buttered cabbage and beef gravy
Summer fruits cheesecake

Describe how you could adapt the menu to suit **each** of the following diets.
Give reasons for each adaptation.

- Coeliac
- Lactose intolerant
- Low cholesterol
- Vegan

[4 × 4 marks]

Turn over for Section 2

Turn over ▶

Section 2

Question 4

1 0 How far do you agree that food products that claim to have health benefits are actually beneficial? Give examples to illustrate your answer. **[10 marks]**

1 1 Describe the typical stages in the life cycle of food products. **[10 marks]**

1 2 How is computer-aided design (CAD) used in the development of new food products? **[8 marks]**

Question 5

1 3 'Sustainability, seasonality and environmental friendliness are important factors in farming, production and transportation of food ingredients and food products.'
Discuss the issues associated with this statement. **[8 marks]**

1 4 Explain why **each** of the foods below has such a long shelf life:

- cartons of orange juice that can be stored at room temperature
- canned sweet corn
- bottled chutney
- dried sultanas.

[4 × 3 marks]

1 5 What might a manufacturer consider when setting up systems in a food factory to ensure that food products are always of a consistent and uniform quality? **[8 marks]**

Question 6

1	6
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 In times of recession and economic hardship, people tend to spend more money on food for home consumption.

Explain why you think this may be so and suggest, with reasons, food choices which might be popular.

[12 marks]

1	7
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 Describe how food legislation helps to protect the consumer and to guide the manufacturer. Give examples to help your answer.

[8 marks]

1	8
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 Discuss how far you agree with the view that people in the United Kingdom waste a lot of food.

[8 marks]

END OF QUESTIONS

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