



General Certificate of Education  
Advanced Level Examination  
June 2011

# Design and Technology: Food Technology

## FOOD3

**Unit 3 Design and Manufacture**

**Thursday 23 June 2011 1.30 pm to 3.30 pm**

**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.
- Write the information required on the front of your answer book. The **Examining Body** for this paper is AQA. 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.

**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 feel it is appropriate.

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Answer **three** questions.

You should answer **one** question from each of Sections 1 and 2, and **one** other question from either section.

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### Section 1

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#### Question 1

*A study carried out last year found that many (adults) were “confused and misinformed” about healthy eating for under-fives. In fact, many nurseries were providing diets that were too low in calories, fat and saturated fat and too high in fruit and vegetables....one multicultural nursery decided it would be easier to cater for the children’s varying dietary needs by providing an all-vegetarian menu, but there were no iron-rich foods such as pulses or nuts to replace the excluded meat and fish.*

**0 | 1** With reference to the article above, to what extent do you think that people are misunderstanding what it means to eat healthily? (16 marks)

Describe each of the following processes.

**0 | 2** gelatinisation of starch (4 marks)

**0 | 3** retrogradation of starch (4 marks)

**0 | 4** syneresis of proteins (4 marks)

#### Question 2

**0 | 5** Discuss why there is still a need to use food additives in commercial food products. (16 marks)

**0 | 6** Explain what is meant by the term fatty acids. (3 marks)

**0 | 7** Explain what is meant by the term triglycerides. (3 marks)

**0 | 8** Describe the process of hydrogenation in relation to the production of trans fats. (6 marks)

#### Question 3

**0 | 9** To what extent do the food choices of ethnic and religious groups influence the type of food products available on the market in Britain today? (16 marks)

**1 | 0** Describe the effects of heat, mechanical action and acid on egg white, making reference to the chemical structure of protein. (12 marks)

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**Section 2**

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**Question 4**

*Listeriosis is a foodborne disease caused by eating food contaminated with Listeria monocytogenes, (which) is well-suited to growth and survival in foods, even if these are stored in the refrigerator. Listeria are common in the environment and can be introduced into food by contact with contaminated surfaces or utensils.*

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| 1 | 1 |
|---|---|

 Read the article above. How might the risk from Listeria be minimised in the production of ready-to-eat-foods? (16 marks)
- |   |   |
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| 1 | 2 |
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 Explain how Modified Atmosphere Packaging (MAP) and vacuum packaging extend the shelf life of food products. Make reference to the packaging materials used. (12 marks)

**Question 5**

*There were many rumours flying around in the spring suggesting that the Government wanted to change the rules about best before date labels on food in an attempt to cut the amount of food wastage in this country. The Food Standards Agency have announced that they have no plans to scrap these date marks on food labels but say that they are working with the Waste Resources Action Programme and food companies to discuss how to improve 'use by' and 'display until' dates.*

- |   |   |
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 Read the article above. To what extent do you agree with the suggestion that date stamping produces food waste? (10 marks)
- |   |   |
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| 1 | 4 |
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 What do you understand by the terms *HACCP* and *Safer Food Better Business*? (10 marks)
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| 1 | 5 |
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 Why do manufacturers study existing food products as a part of their market research? (8 marks)

**Turn over for the next question**

**Turn over ►**

**Question 6**

*'Recently released figures show that 80% of newly launched functional foods fail within their first year on the market even if manufactured by well-known brands such as Danone, Unilever and Nestle, for example Unilever's soy fruit drinks and Nestle's probiotic cereals'.*

**1 6** Read the article above. Why do you think that such a high proportion of newly developed products, such as functional foods, fail within their first year of being on the market? (16 marks)

Explain how the methods of preservation listed below preserve food and extend shelf life.

**1 7** Bottling (4 marks)

**1 8** Canning (4 marks)

**1 9** Ultra Heat Treatment (UHT) (4 marks)

**END OF QUESTIONS**