



General Certificate of Education  
Advanced Level Examination  
June 2015

# Design and Technology: Food Technology

## FOOD3

### Unit 3 Design and Manufacture

Monday 8 June 2015 9.00 am to 11.00 am

**For this paper you must have:**

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

**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 the 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 feel it is appropriate.

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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.

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### Section 1

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#### Question 1

0	1
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'The Government is to roll out new salt reduction targets to the food industry. The aim is to cut the salt content of manufactured and catering food by a further 25% because recent findings have shown that, on average, we are still consuming 8.2 g per day. The Department of Health recommendation for adults is less than 6 g per day.'

With reference to the article above, explain why the government is concerned about high salt intake in the United Kingdom.

[10 marks]

0	2
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State **three** different types of manufactured food products which are high in salt.

For **each** type of food product you have chosen, suggest **one different** way of reducing the salt levels.

[3 × 2 marks]

0	3
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Describe, with examples, the following terms with reference to the working characteristics of eggs:

- aeration
- coagulation
- coating
- glazing.

[4 × 3 marks]

**Question 2****0 4**

'Research suggests that in Britain we consume 43% more food than we actually need. This equates to 384 kg excess food and drink per person each year which is referred to as 'mindless eating'.'

Discuss the issues raised in the article above.

**[12 marks]****0 5**

Explain what is meant by the following terms:

- oxidative rancidity
- trans fats
- triglycerides
- melting point of fat.

**[4 × 3 marks]****0 6**

What is the difference between a sol and a gel?

**[4 marks]****Question 3****0 7**

Many secondary school children do not eat at lunch time. Give reasons why this may be the case and explain why it is important for school children to eat at lunch time.

**[12 marks]****0 8**

Explain why emulsifiers are used in the food industry and give examples to show how they work in various food products.

**[8 marks]****0 9**

With reference to specific foods, explain the following terms:

- enzymic browning
- Maillard reaction.

**[2 × 4 marks]****Turn over for Section 2****Turn over ►**

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**Section 2**

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**Question 4**

**1 0** Market research has shown that the amount of pasta consumed in the UK between 1987 and 2009 increased by 200%. Explain in detail the reasons for this increase. **[12 marks]**

**1 1** Describe what HACCP is and explain its importance in the food industry. **[10 marks]**

**1 2** Explain why drying is a popular method of food preservation. In your answer give examples of different drying methods. **[6 marks]**

**Question 5**

**1 3** A product development team are designing a new food product. They have carried out market research and have concluded that the consumer demand is for low calorie, self-assembly main meals which are colourful, tasty and appear like a homemade dish.

Describe how the product development team would use the information above to create the new food product.

**[12 marks]**

**1 4** What are the advantages and disadvantages of packaging all liquid food products in refillable bottles or containers? **[10 marks]**

**1 5** Describe **two** food sources and **one** symptom of food poisoning for **each** of the following:

- Bacillus cereus
- Campylobacter.

**[2 × 3 marks]**

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**Question 6**

1	6
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'It has been suggested that between 30% and 50% (almost 7 million tonnes) of food produced gets wasted in the United Kingdom. Food is not just wasted in homes; it is wasted at each stage of the distribution chain. A lot of the food that is wasted is often still edible and of high nutritional value.'

Discuss the moral and economic issues raised in this statement.

**[12 marks]**

1	7
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Describe the process of microbial risk assessment and explain how it can be effective in controlling outbreaks of food poisoning.

**[8 marks]**

1	8
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Drying is one way of preserving fresh milk. Describe **two** other preservation methods suitable for extending the shelf life of fresh milk.

**[2 × 4 marks]**

**END OF QUESTIONS**

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