



General Certificate of Education
Advanced Level Examination
June 2012

Design and Technology: Food Technology

FOOD3

Unit 3 Design and Manufacture

Wednesday 13 June 2012 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. Use pencil and coloured pencils only for drawing.
- 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 think it is appropriate.

Answer **three** questions.

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

Section 1

Question 1

- 0 | 1** Describe the chemical structure of protein. You may use diagrams and sketches to help you to answer this question *(8 marks)*
- 0 | 2** Describe the effects of **each** of the following on animal protein foods:
- heat
 - acids
 - mechanical action. *(12 marks)*
- 0 | 3** Compare and contrast the lacto-ovo vegetarian diet with the vegan diet. *(8 marks)*

Question 2

- 0 | 4** Explain in detail **each** of the following terms:
- fatty acids
 - hydrogenation
 - hydrolytic and oxidative rancidity. *(12 marks)*
- 0 | 5** Using examples, explain how fats and oils can provide physical and sensory variety in food products. *(8 marks)*
- 0 | 6** Describe current nutritional guidelines and explain how they can be used to promote healthy eating. *(8 marks)*

Question 3

- 0 | 7** Explain how food spoilage occurs, with reference to micro-organisms. *(8 marks)*
- 0 | 8** Describe the use of micro-organisms and enzymes in the production of cheese and yoghurt. *(12 marks)*
- 0 | 9** 'Food Processing can affect the nutritive value of food'. Discuss. *(8 marks)*

Section 2

Question 4

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Discuss in detail the issues raised in the article below.

Our love affair with ready meals is driving an influx of innovative new products, with the independent business analyst reporting that the UK clocked up the highest level — 19% — of all ready meal product launches in Europe in 2009. Alternative sales channels such as independent ready meal stores and Internet-based home delivery services are also pushing up demand in the mature markets of Europe, particularly in the UK. The high level of product launches combined with the increased level of spend is reflected in the trend for tastier, and more traditional products that claim to be homemade. Specifically Business Insights believes that growth in the market will come from the trend of ready-to-cook rather than ready-to-eat meals.

(Brits eat most ready meals in Europe, 19th May 2010: Food Processing) (12 marks)

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Manufacturers are obliged by law to put procedures/systems into place to make food products safe to eat. Describe one or more of these and explain how they are monitored and controlled. (10 marks)

1	2
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Describe the following short-term food preservation methods and give an example of the use of each:

- Modified Atmosphere Packaging (MAP)
- Vacuum packaging.

(6 marks)

Turn over for the next question

Turn over ►

Question 5

1 3 The following are commonly used to preserve foods. Explain how **each** inhibits microbial growth, giving food examples.

- Sugar
- Salt
- Vinegar
- Smoke

(4 × 3 marks)

1 4 The packaging of fresh foods and food products is a major factor in food production. Discuss. (8 marks)

1 5 Describe how Information Communication Technology (ICT) is used in food production and distribution. (8 marks)

Question 6

1 6 Describe the possible source of infection and the symptoms of food poisoning for **each** of the following:

- *Salmonella*
- *Campylobacter*
- *Staphylococcus aureus*.

(3 × 4 marks)

1 7 It is thought by many that the media encourages young children to consume unhealthy drink products. Discuss the issues raised in the article below.

A high proportion of adults in the UK (66%) are worried about the influence drinks companies have on young children; with 29% of respondents in favour of banning all advertisements for carbonated or sugary soft drinks. Despite this, more than half of parents (51%) have let their children drink Coca-Cola in the last year, 40% of parents have served their children Ribena and 57% have served Robinson's, including Squash, Barley Water and Fruit Shoots. 34% of parents have given their children bottled water over the past year.

(*Health risks associated with soft drinks worry UK consumers, 18th June 2010*)

(10 marks)

1 8 Describe the process of irradiation and discuss any concerns regarding its use as a method of preservation. (6 marks)

END OF QUESTIONS