

A-level

DESIGN AND TECHNOLOGY: FOOD TECHNOLOGY

Unit 3 Design and Manufacture

Friday 10 June 2016

Morning

Time allowed: 2 hours

Materials

For this paper you must have:

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

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 you do not want to be marked.

Information

- The marks for the 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.

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
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 Eggs have many different physical and chemical functions in food production.

Describe the function of eggs in the following:

- mayonnaise
- whisked sponge
- Scotch egg
- sausage rolls.

[4 x 3 marks]

0	2
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 The Food Standards Agency have advised consumers **not** to wash raw chicken before they cook it so that the risk of spreading bacteria is reduced.

Which **three** types of food poisoning bacteria are most often found in poultry?

[3 marks]

0	3
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 What advice would you give about storing, preparing and cooking chicken safely so that people do not get food poisoning? Justify each piece of advice.

[9 marks]

0	4
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 How are amino acids combined to form polypeptide chains?

You may use diagrams to explain your answer.

[4 marks]

Question 2

0 5 Fat is essential for good health but fat is often wrongly shown to be something **not** to eat. Eating healthily is **not** cutting all fat from the diet. It is knowing how much of each type of fat to eat.

Justify this statement using supporting evidence and examples of your own.

[12 marks]

0 6 Explain why fats and oils might go rancid.

[4 marks]

0 7 How can rancidity be prevented?

[4 marks]

0 8 In relation to fats and oils, explain what is meant by the following terms:

- shortening
- lubrication
- plasticity
- medium for cooking and sealing.

[4 x 2 marks]

Question 3

0 9 Explain why modified starches have been developed for the food industry. Using examples, describe their working properties.

[8 marks]

1 0 How can you adapt this hospital menu for a patient who needs a diet high in NSP (non-starch polysaccharide)? Explain your choices.

Breakfast:	Cornflakes and milk, white toast and honey
Lunch:	Macaroni cheese, chocolate mousse
Evening Meal:	Stewed beef in gravy with mashed potatoes and carrots, sponge pudding and custard

[12 marks]

1 1 What effects can cooking and processing have on the vitamin content of foods?

[8 marks]

Turn over for Section 2

Turn over ►

Section 2

Question 4

1 | 2 The snacking habits of 16 to 19 year olds have led food developers to refer to them as the 'grazing generation'.

Design **two** different snack products which appeal to this target group, whilst also supporting their nutritional needs.

Describe each idea and justify your choices. You may use annotated diagrams in your response.

[2 x 6 marks]

1 | 3 Explain why it is important for food manufacturers to evaluate food products during product development:

- against their intended purpose
- against other similar products.

[2 x 4 marks]

1 | 4 What must a manufacturer take into account when calculating the selling price of a food product?

[8 marks]

Question 5

1 | 5 'Good hand hygiene systems are not just nice-to-have 'extras' in food processing companies, they are essential to the smooth running of the business. If just one employee does not follow proper hand hygiene procedures, the entire workforce – and the company – will be put at risk.'

Describe **six** different hand hygiene practices for a person working with food and give a reason why each practice is needed.

[12 marks]

1 | 6 Food spoils because of the microbial action of yeasts, moulds and pathogenic bacteria. What conditions do these microbes require for optimum growth?

Explain why **each** condition is important.

[12 marks]

1 | 7 Why is traceability so important for the food industry?

[4 marks]

Question 6

- | | |
|---|---|
| 1 | 8 |
|---|---|

 How can food manufacturers make their factories more energy efficient? **[10 marks]**
- | | |
|---|---|
| 1 | 9 |
|---|---|

 How might a new food product be effectively launched? **[8 marks]**
- | | |
|---|---|
| 2 | 0 |
|---|---|

 Some preservation methods change the physical and sensory qualities of the food.
Which methods of preservation are best for maintaining these original characteristics?
Explain your answer. **[10 marks]**

END OF QUESTIONS

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