

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5	
6	
TOTAL	



General Certificate of Secondary Education  
June 2014

# Design and Technology: Food Technology

**45451**

## Unit 1 Written Paper

Tuesday 3 June 2014 1.30 pm to 3.30 pm

**For this paper you must have:**

- a black pen, a pencil, a ruler, an eraser, a pencil sharpener and coloured pencils.

**Time allowed**

- 2 hours

**Instructions**

- Use black ink or black ball-point pen. Use pencil and coloured pencils only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this answer book. Cross through any work you do not want to be marked.

**Information**

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 120.
- The question in Section A relates to the context referred to in the Preliminary Material that was previously issued.
- You are reminded of the need for good English and clear presentation in your answers. Quality of Written Communication will be assessed in Question 4(c).



J U N 1 4 4 5 4 5 1

**Section A**

You should answer this question in the spaces provided.

Section A is about designing new products.

You should spend about 30 minutes on this question.

**Context:** Decorated cakes

- 1 (a) (i)** Manufacturers want to create a new range of decorated cakes for cafes and restaurants offering luxury afternoon teas.

On the next page, use notes **and** sketches to produce **two** different design ideas for suitable decorated cakes.

You **must** annotate your two design ideas to show the creative use of different:

- cake making methods
- decorative techniques and finishes
- natural flavours and colours.

Do **not** draw any packaging.

**[12 marks]**



Name of design idea 1: \_\_\_\_\_

Name of design idea 2: \_\_\_\_\_

**Question 1 continues on the next page**

**Turn over ▶**



**1 (a)(ii)** Choose one of your design ideas. Tick the design idea you have chosen.

Design idea 1

Design idea 2

On the chart below, complete the plan for making your chosen design idea in the test kitchen.

**[9 marks]**

<b>Stages of making the cake</b> (You must include the decorative techniques and finishes)	<b>Quality control, hygiene and safety checks</b>



**1 (b)** Complete the chart below to show the quantities of ingredients for a batch of cakes using the creaming method.

The first ingredient is completed for you.

**[3 marks]**

Ingredient	Quantity
Flour	100g
Fat	
Sugar	
Egg	

**1 (c)** Explain what would happen if too much sugar is used when making a fruit cake.

**[3 marks]**

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**Question 1 continues on the next page**

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**1 (d)** Give **three** reasons why some manufacturers use natural flavours and colours instead of artificial flavours and colours in cake products.

**[3 marks]**

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<b>30</b>



**Turn over for the next question**

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ANSWER IN THE SPACES PROVIDED**

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**Section B**

You should answer **all** questions in this section in the spaces provided.

Question 2 is about product analysis.

You should spend about 20 minutes on this question.

**2** The table below shows the traffic light labelling system used by some food manufacturers.

Per 100g of food			
	Low	Medium	High
Fat	Less than 3g	3g - 20g	More than 20g
Saturated fat	Less than 1.5g	1.5g - 5g	More than 5g
Salt	Less than 0.3g	0.3g - 1.5g	More than 1.5g
Sugars	Less than 5g	5g - 15g	More than 15g

Adapted from the Food Standards Agency

**2 (a) (i)** Explain how the traffic light labelling system helps the consumer with food choices.

Give examples in your answer.

**[5 marks]**

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**2 (a) (ii)** Name **two** health problems caused by too much salt in the diet. **[2 marks]**

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**2 (b) (i)** Explain the difference between 'saturated fat' and 'unsaturated fat'. **[4 marks]**

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**2 (b) (ii)** Give **three** reasons why consumers may choose food products that contain less than 3g of fat. **[3 marks]**




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**Question 2 continues on the next page**

**Turn over ▶**



2 (c) The nutritional value of some breakfast cereals is shown below.

Breakfast cereal	Approximate nutritional value per serving (without milk)		
	Energy	Sugar	Fibre
<b>Frosted flakes</b> 	110 kcal	11g	1g
<b>Wheat biscuits</b> 	134 kcal	1.7g	3.8g
<b>Oats</b> 	100 kcal	0.3g	2.8g

Using the information in the table above, discuss the choice of breakfast cereals for young people who want to eat healthily. Give reasons for your answers.

[6 marks]

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Question 3 is about sensory testing and sauce making.

You should spend about 15 minutes on this question.

**3 (a)** Complete the information below to explain the main stages of making a cheese sauce using the **all in one** method.

**3 (a) (i)**

Stage 1: Collecting the ingredients	Here are the main ingredients used to make a cheese sauce:  Plain flour    Butter    Milk    Grated cheese  Which ingredient contains starch?  .....  <b>[1 mark]</b>
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**3 (a) (ii)**

Stage 2: Mixing the ingredients together	Explain why it is important to stir the mixture all the time when using the all in one method.  <b>[2 marks]</b> ..... ..... ..... ..... ..... ..... .....
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**3 (a) (iii)**

Stage 3:	Describe what happens to the starch granules when the cheese sauce is heated to the following temperatures:
Heating the mixture	<b>[4 marks]</b>
	60°C:..... ..... .....
	80°C:..... ..... ..... .....
	100°C:..... .....

**3 (b)** Explain why some manufacturers use standard components instead of fresh ingredients to make a cheese sauce.

**[4 marks]**

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**Question 3 continues on the next page**

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**3 (c)** Explain why the following are used in the development of a cheese sauce in the test kitchen.

**3 (c) (i)** A profiling test.

**[3 marks]**

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**3 (c) (ii)** A hygienic and quiet area for taste testing.

**[3 marks]**

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Question 4 is about producing quality products.

You should spend about 25 minutes on this question.

- 4 (a)** For each food product below, use annotated sketches to describe different ways of producing quality finishes.

**[8 marks]**

Lemon meringue pie

Bread rolls





**4 (b)** Describe specific quality control checks that are made when the following ingredients are delivered to the retailer.

Do not repeat any of your answers.

**[3 × 3 marks]**

Fresh fish

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Fresh fruit and vegetables

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Several packets of frozen, ready rolled pastry

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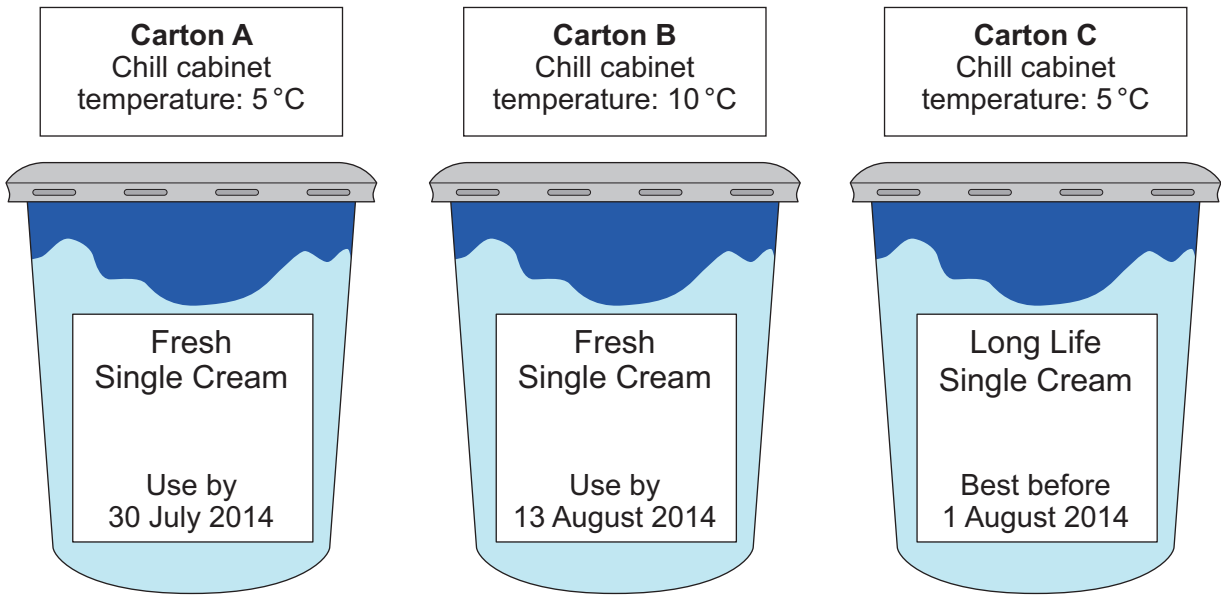
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**Question 4 continues on the next page**

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**4 (c)** Cartons of single cream are for sale in different chill cabinets on 31 July 2014.



Explain in detail which of the cartons shown above are safe for consumers to buy and which consumers should avoid.

Give reasons for your answers.

Quality of Written Communication will be assessed in this question.

**[8 marks]**

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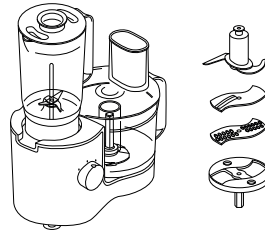
Question 5 is about equipment in the test kitchen.

You should spend about 15 minutes on this question.

**5** Explain why the following equipment is useful when designing or making food products in the test kitchen.

**5 (a)** A food processor with a range of attachments.

Give examples of its use in your answer.



**[5 marks]**

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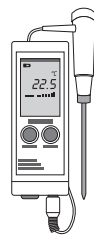
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**5 (b)** A temperature probe.

Give examples of its use in your answer.



**[5 marks]**

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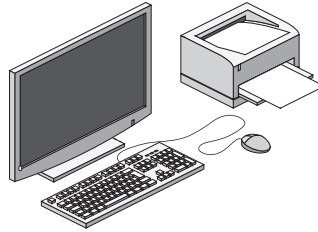
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**5 (c)**

A computer with a printer.

Give examples of its use in your answer.



**[5 marks]**

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**Turn over ▶**



Question 6 is about environmental issues.

You should spend about 15 minutes on this question.

**6 (a)** How can consumers make environmentally friendly choices when shopping for food products?

**[7 marks]**

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**6 (b)** Describe how manufacturers can be environmentally friendly when packaging food products.

**[6 marks]**

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**END OF QUESTIONS**



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