

Oxford Cambridge and RSA Examinations
General Certificate of Secondary Education

DESIGN AND TECHNOLOGY (FOOD TECHNOLOGY)
PAPER NUMBER 2
Higher Tier

1954/2
1054/2

Specimen Paper 2003

Additional materials: None
Candidates answer on the question paper.

TIME 1 hour 15 minutes

Candidate Name	Centre Number	Candidate Number												
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INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and Candidate number in the boxes above.
- *Answer all the questions.*
- Write your answers, in blue or black ink, in the spaces provided on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **50**.
- *You will be awarded marks for the quality of written communication where an answer requires a piece of extended writing.*

Question number	For examiner's use only
1	
2	
3	
4	
5	
TOTAL	

1. A food manufacturer wishes to develop a range of savoury cheese flans. A prototype flan has the following specification.

Pastry Case	Filling
200g plain flour	250ml milk
100g fat	2 eggs
¼ teaspoon salt	75g cheese
water to mix	50g chopped onion
	salt & pepper

- (a) Explain the function of each ingredient during the preparation and cooking of the cheese flan.

Ingredient	Function
Fat	
Water	
Salt	
Eggs	

[4]

[Question 1 continued on next page]

- (b) The test kitchen would like to develop the specification to extend the product range.
Suggest **two** changes, with reasons, which could be made to the prototype.

Change 1:	Reason:
Change 2:	Reason:

[4]

- (c) Give **two** reasons why egg products are classed as high-risk foods.

[2]

Total [10]

2. A food manufacturer produces 'salads in a tub.'

Coleslaw:
Ingredients
Cabbage (53%)
Mayonnaise
Carrots (18%)
Onion (2%)
Lactic Acid
Acetic Acid
Nutritional Information
Per ½ pot 109 calories (9.4g fat)



(a) Look at the label. State why cabbage is shown at the top of the list.

[1]

(b) (i) Name **one** ingredient from the product label that contributes to the fat content.

[1]

(ii) Suggest an alternative that would reduce the fat content.

[1]

[Question 2 continued on next page]

Question 2 continued

- (c) (i)** Name **one** ingredient that contributes to the NSP (Non Starch Polysaccharide)

_____ [1]

- (ii)** Suggest an ingredient that would increase the NSP of this product.

_____ [1]

- (d)** A food manufacturer wants to extend the range of 'salads in a tub.'

- (i)** Design a new product, clearly listing the main ingredients.

_____ [4]

- (ii)** Identify the market for which the product is intended.

_____ [1]

Total [10]

3. Food is preserved in many ways. Cook/chill and MAP (Modified Atmosphere Packaging) are two of the methods used.

(a) For each of these methods explain;

- how the food is preserved
- the advantages of the method

Cook/Chill

Preservation Process _____

_____ [2]

Advantages _____

_____ [2]

MAP

Preservation Process _____

_____ [2]

Advantages _____

_____ [2]

[Question 3 continued on next page]

- (b) International food labelling regulations describe the information that **must** be on a food label.

Name **two** pieces of information that appear on a food label.

[2]

Total [10]

4. Temperature control is an important aspect when manufacturing food products.

(a) What piece of equipment is used in the food industry to check the temperature of food?

_____ [1]

(b) What is the temperature range known as “the danger zone?”

_____ [1]

(c) What is meant by the term ‘ambient temperature?’

_____ [1]

(d) Some foods do not freeze successfully.

Name **one** of these foods and explain why this is the case.

Name of food _____ [1]

Reason _____

_____ [2]

(e) The characteristics of certain foods can be altered by the transfer of heat to and from the food.

Give **two** effects, with reasons, of temperatures above 63°C on food.

_____ [4]

Total [10]

5. Evaluation is a crucial element when designing and making a new product.

(a) Give **four** ways in which a manufacturer would carry out evaluation procedures during the design of a new product.

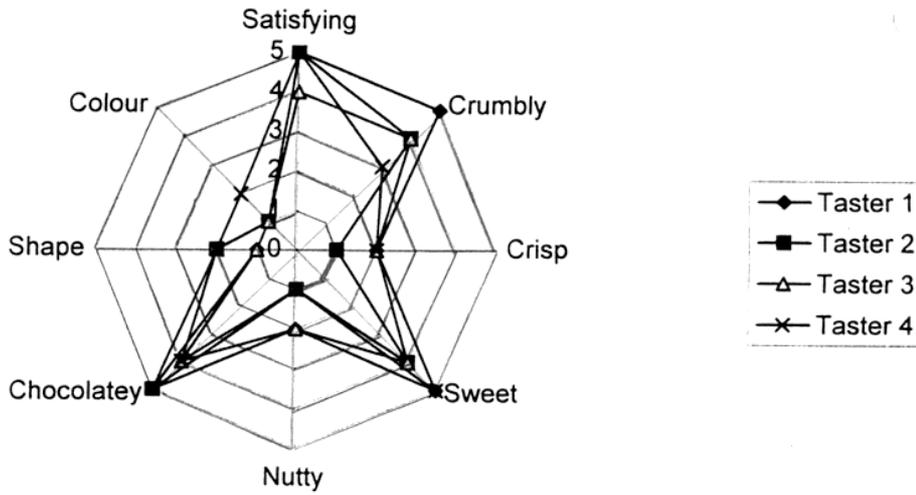
[4]

The information below shows the results from a sensory analysis testing of a prototype low calorie snack biscuit for Primary school children.

	Taster 1	Taster 2	Taster 3	Taster 4
Satisfying	5	5	4	5
Crumbly	5	4	4	3
Crisp	2	1	2	2
Sweet	5	4	4	5
Nutty	2	1	2	1
Chocolatey	5	5	4	4
Shape	1	2	1	2
Colour	1	1	1	2

[Question 5 continued on next page]

The star diagram below represents the data from the tasting.



(b) From the star diagram identify the characteristics which could be changed to make the product more suitable as a low calorie snack biscuit for Primary School Children.

[6]

Total [10]

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MARK SCHEME

Specimen Paper 2003

Question	Answer	Total Marks Available								
<p>1(a)</p> <p>(b)</p> <p>(c)</p>	<p>Fat – Coats flour grains to stop gluten forming when water is added, to make sure that the pastry has a short, crumbly texture.</p> <p>Water – Binds rubbed in flour/fat mix together, allows pastry to be rolled out easily.</p> <p>Salt – Helps develop flavour</p> <p>Eggs – When heated sets the milk</p> <p>Two changes from:</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="padding-right: 10px;">Broccoli</td> <td rowspan="6" style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; width: 20px;"></td> <td rowspan="6" style="padding-left: 10px;">Nutritional Value</td> </tr> <tr><td style="padding-right: 10px;">Spinach</td></tr> <tr><td style="padding-right: 10px;">Tomato</td></tr> <tr><td style="padding-right: 10px;">Pepper</td></tr> <tr><td style="padding-right: 10px;">Mushroom</td></tr> <tr><td style="padding-right: 10px;">Ham</td></tr> </table> <p>Combination of cheeses – to improve colour/flavour/texture</p> <p>Two from:</p> <p>Salmonella, high protein moisture content, provide ideal conditions for micro-organic growth.</p>	Broccoli		Nutritional Value	Spinach	Tomato	Pepper	Mushroom	Ham	<p style="text-align: center;">4</p> <p style="text-align: center;">4</p> <p style="text-align: center;">2</p>
Broccoli		Nutritional Value								
Spinach										
Tomato										
Pepper										
Mushroom										
Ham										
Total 10										

Question	Answer	Total Marks Available
2(a)	Has the highest quantity of it in the ingredients. They are stated in descending order.	1
(b) (i)	Mayonnaise	1
(b) (ii)	Alternative – Low fat mayonnaise, Crème fraiche, Mustard.	1
(c) (i)	One from: Cabbage, Carrot, Onion	1
(c) (ii)	Add: Pulses, nuts, other vegetables (e.g.: celery)	1
(d) (i)	Potato Salad – Potato/spring onion/mayonnaise/chives/peppers Pasta Salad – Spring onion/chives/salami/tomato/red pepper/mushroom	4
(d) (ii)	One from: Picnic, barbecue, packed lunches, summer buffet.	1
		Total 10

3(a)	<p>COOK/CHILL</p> <p>Preservation Process – Fully cooked/fast chilled. Stored at low temperatures above freezing point (0° - 3°C).</p> <p>Advantage – Can be used for up to 5 days as bacteria becomes inactive and does not multiply if the product is kept chilled.</p> <p>MAP</p> <p>Preservation Process – Packed in combinations of Carbon Dioxide, Nitrogen and Oxygen Gas.</p> <p>Advantage – Increases shelf life. Helps product to keep colour, flavour and texture.</p>	<p>2 x 2</p> <p>2 x 2</p>
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[Question 3 continued on next page]

Question	Answer	Total Marks Available
3(b)	<p>Two from:</p> <p>Name of product, ingredients in descending order of weight, Net weight of product, name and address of manufacturer, use by or best before date, shelf life, storage conditions or conditions of use.</p>	2
		Total 10

4(a)	Temperature probe	1
(b)	5 - 63°C	1
(c)	Normal room temperature (20 - 25°C)	1
(d)	Lettuce/strawberries	1
	Reason: Crystals erupt and rupture the cells and causes cell damage	2
(e)	<p>Two from:</p> <p>More digestible – heat softens the cell structure</p> <p>Alters chemical properties – releases more nutrients</p> <p>Safer to eat</p> <p>Tastier</p>	4
		Total 10

Question	Answer	Total Marks Available
5(a)	<p>Four from:</p> <p>Collect ideas and see whether people will buy the product</p> <p>Tasting groups</p> <p>Analyse performance of control system e.g.: did the control checks work?</p> <p>See whether it is easy to manufacture</p> <p>See whether its' easy to transport</p> <p>Tingle testing using two old products and a new one</p> <p>Microbacterial testing</p>	4
(b)	<p>Reduce chocolate</p> <p>Reduce sugar content</p> <p>Reduce the nut content</p> <p>Replace the above with raisins, dried fruit.</p> <p>Modifying</p>	6
		Total 10

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