

Candidate Name	Centre Number	Candidate Number

WELSH JOINT EDUCATION COMMITTEE
General Certificate of Secondary Education



CYD-BWYLLGOR ADDYSG CYMRU
Tystysgrif Gyffredinol Addysg Uwchradd

139/02

DESIGN AND TECHNOLOGY

PAPER 2

FOCUS AREA: FOOD TECHNOLOGY

(Foundation Tier – Grades G to C)

P.M. TUESDAY, 5 June 2007

(1½ hours)

	Leave Blank
Question 1	
Question 2	
Question 3	
Question 4	
Question 5	
TOTAL MARK	

ADDITIONAL MATERIALS

You will need coloured pencils for this examination.

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

No certificate will be awarded to a candidate detected in any unfair practice during the examination.

Answer **all** questions in the spaces provided.

1. The picture below shows some popular snack foods.



(a) (i) **Name one** snack food shown in the picture which has a high sugar content. [1]

.....

(ii) **Name two** snack foods shown in the picture which have a high fat content. [2]

.....

.....

(iii) **Name one** of the snack foods shown in the picture which is a healthier option and **give one** reason for your choice.

Snack food [1]

Reason

..... [2]

(b) A poor diet can lead to many health problems. Use the word bank below to **complete** the sentences that follow.

fat sugar fibre salt

• Too much saturated can raise cholesterol levels and could lead to heart disease. [1]

• Too much can lead to tooth decay and excess weight gain. [1]

• Too much can cause high blood pressure which can lead to a stroke. [1]

(c) Manufacturers develop new food products. The picture below shows some new fruit drinks.



(i) Give one reason why manufacturers develop new food products. [2]

.....

.....

(ii) List two reasons why a consumer is likely to buy the fruit drinks. 2 x [1]

Reason 1:

Reason 2:

(iii) Some people are concerned about the environment. Give one environmental reason why some people would not buy these drinks. [2]

.....

.....

(d) Tick (✓) one box to show the correct statement below. [1]

- Vitamin C provides energy;
- Vitamin C helps you to lose weight;
- Vitamin C helps to maintain healthy skin and gums.

2. (a) Raw foods are processed to provide a range of food materials which can be used in different ways.

Complete the table below. *One example has been done for you.*

[2]

Raw food	Food material	Food product
Soya bean	TVP	Vegetarian sausage
Sugar beet	Toffee
Wheat grains	Pastry

- (b) The basic food materials for making a cake are shown below. Each one performs important *sensory* and *physical* functions.



- (i) In the table below, **list one** of the food materials which has a *sensory* function and **state** what the function is.

[2]

Food material	Sensory function
.....

- (ii) **Underline** the correct main *physical* functions of the food materials used to make cakes.

[3]

- Flour is used for sweetening / bulking / emulsifying;
- Eggs are used for shortening / flavouring / raising;
- Margarine is used for shortening / binding / raising.

- (c) **Explain one** way of making a healthier cake.

[2]

.....

.....

(d) **Study** the two cake recipes given below, then answer the questions that follow.

Recipe 1		Recipe 2	
100g	S.R. Flour	200g	S.R. Flour
100g	Caster Sugar	100g	Caster Sugar
100g	Margarine	100g	Margarine
2	Eggs	1	Egg

(i) **State** the ratio of fat to flour in Recipe 1. [1]

(ii) **State** the ratio of fat to flour in Recipe 2. [1]

(iii) **Explain** why a cake made from **Recipe 2** has a drier crumbly texture than one made from **Recipe 1**. [2]

.....
.....

(e) The picture below shows a large quantity of cakes being made in industry. Manufacturers try to make sure that each cake is identical in every production run.



State how manufacturers make sure that all cakes are the same

• Shape; [1]

• Colour; [1]

• Weight. [1]

3. (a) Micro-organisms cause foods to decay. **Circle two** words from the list below that are micro-organisms. 2 x [1]

calcium mould tofu protein bacteria



- (b) (i) Some methods of preserving foods are listed below. Each method prevents or slows the action of micro-organisms. **Explain** how **each** method works.

One example has been done for you.

2 x [2]

Food Product	Method of preventing the growth of micro-organisms	How each method works
<i>Fish</i>	<i>Canning</i>	<i>Micro-organisms are destroyed in the high temperature used in canning.</i>
Vegetables	Freezing
Bacon	Vacuum packing

(ii) Give two rules that all food handlers must follow when preparing food products. 2 x [1]

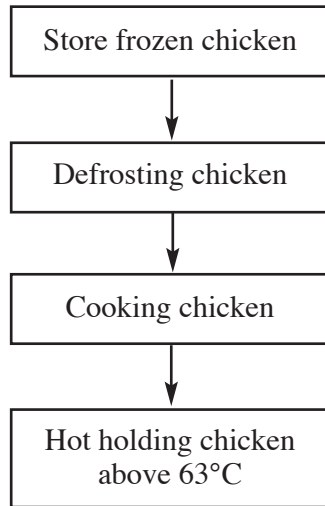
Rule 1:

Rule 2:

(iii) Many supermarkets sell whole roasted chickens. The diagram below shows a simplified production process. Two safety checks are shown. Complete the diagram to show two other safety checks that need to be done. 2 x [2]

The Process

Possible safety check



Check freezer temperature is set at -18°C

.....

.....

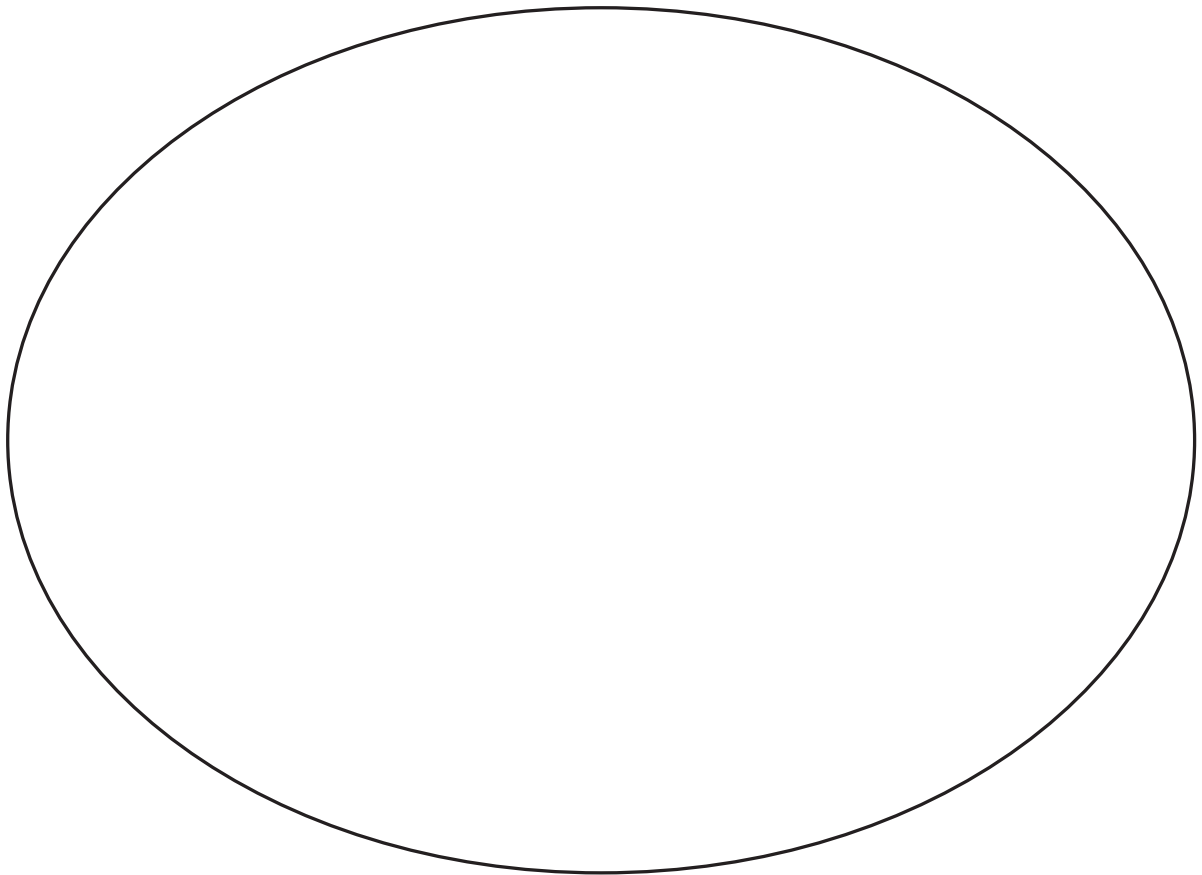
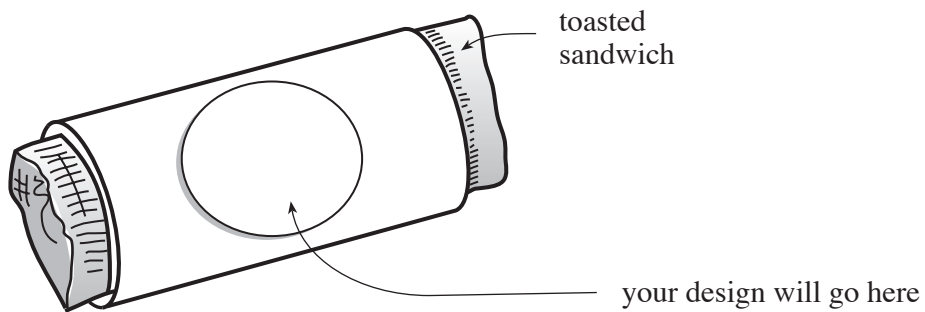
Every 20 minutes, check temperature is consistent

- (c) A food manufacturer is developing a new range of hot toasted sandwiches for teenagers. The new range is to be called 'Tosti'.

Design a suitable image to go on the wrapper. Draw your design in the **large oval space** below.

Marks will be awarded for:

- | | |
|---|-----|
| (i) including the name of the product; | [3] |
| (ii) showing what the filling is; | [3] |
| (iii) the use of colour and the quality of communication. | [3] |



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4. (a) Manufacturers use symbols on food packaging labels. **State** what **each** symbol means.



..... [1]



..... [1]

(b) A nutrition label for a pot of 'green thai chicken curry with rice' is given below.



Typical Values per 100g	
Energy	190 kcal
Protein	6.3g
Carbohydrate	18.8g
Fat	9.8g

(i) **State** the main function of carbohydrate in the diet. [1]

.....

(ii) **Give two** nutritional reasons why protein is needed in the diet. [2]

Reason 1

Reason 2

(iii) **Circle the two** vitamins likely to be present in fat. [2]

A B C D

(iv) Some food manufacturers make products that can be stored for up to a year. **Place** a tick (✓) in the right hand column to show the **two** groups of additives that will **extend** shelf life. [2]

Groups of Additives	Extends shelf life
Emulsifiers	
Anti-oxidants	
Stabilizers	
Preservatives	

(c) Sensory analysis tests are used by food technologists to evaluate the curry in the development stage.

(i) **Name one** specific example of a sensory analysis test. [1]

.....

(ii) **State** what the test is used for. [1]

.....

(iii) **Describe** how to set up the test. [4]

.....

.....

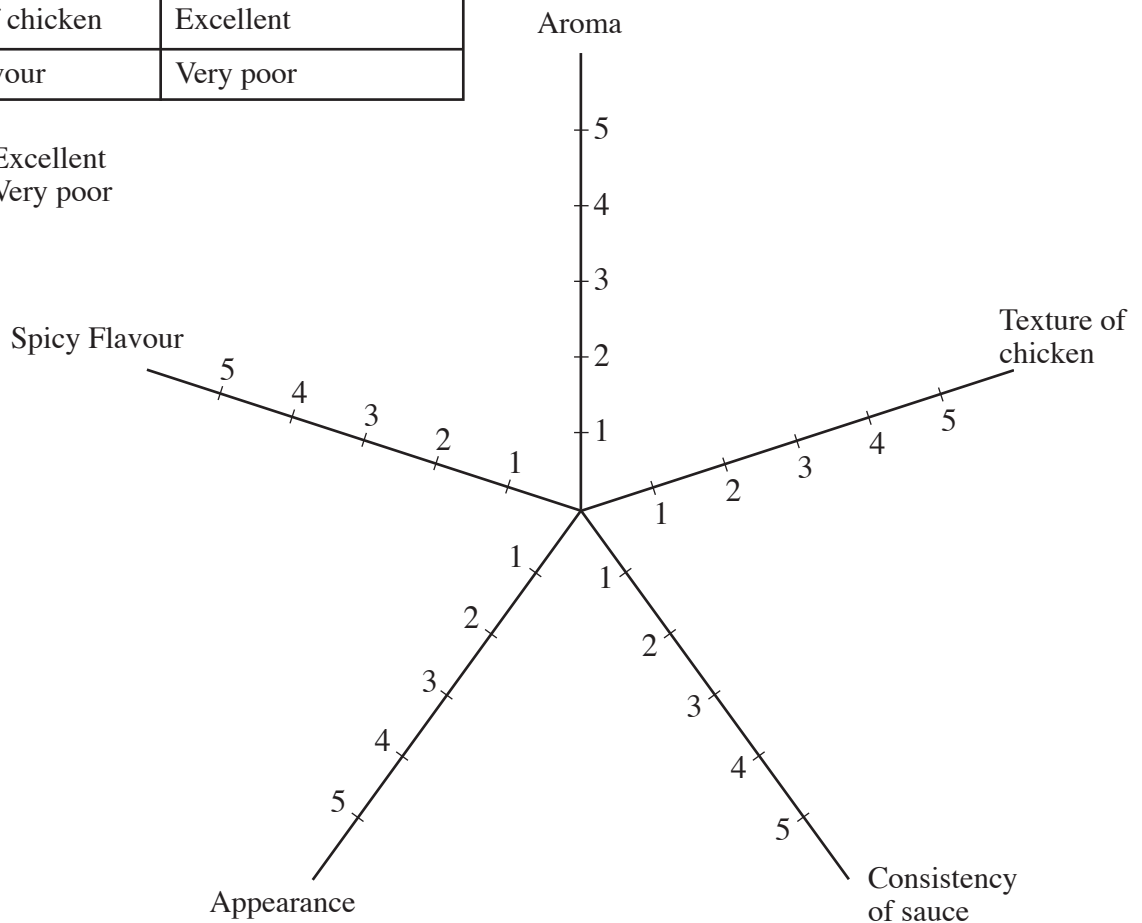
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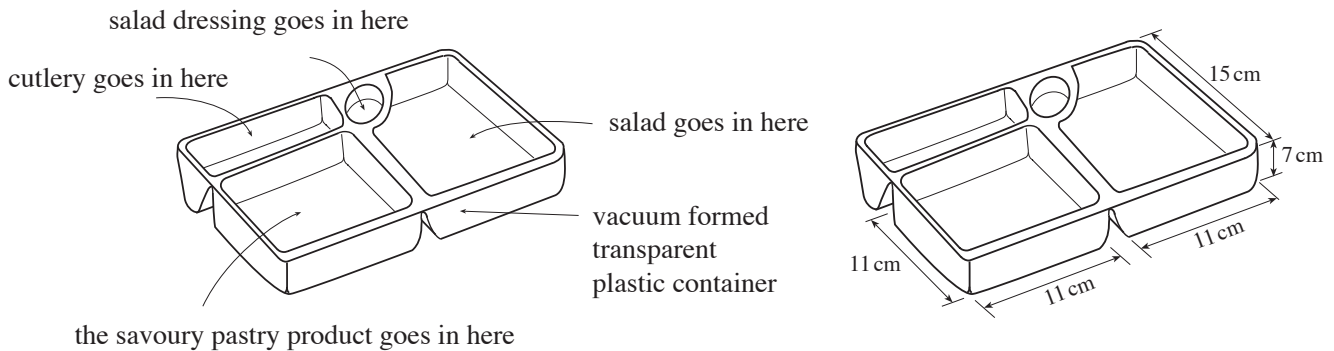
(d) A star profile can be used to show the results of a sensory analysis test on the curry. Use the information in the table to **complete** the star profile started below. [7]

<i>QUALITY</i>	<i>RATING</i>
Aroma	Satisfactory
Consistency of sauce	Very good
Appearance	Good
Texture of chicken	Excellent
Spicy Flavour	Very poor

Key: 1 = Excellent
5 = Very poor



5. A manufacturer is planning to develop a healthy ready to eat meal for one person. The general idea for the product is shown below. You have been asked to design a savoury pastry product for this meal.



- (a) **Sketch, colour and label two different** designs for an interesting, healthy, savoury pastry product.

The pastry product must:

- fit into the section of the container indicated above;
- have an interesting pastry casing or base;
- contain a good source of protein;
- have a high fibre content.

Marks will be awarded for:

- (i) the design of an interesting, healthy, savoury, pastry product containing protein and fibre; 2 x [3]
- (ii) detailed labelling of **all** the food materials used to make the pastry product; 2 x [4]
- (iii) quality of communication, including a **cross-section** and **dimensions** of the pastry product. 2 x [4]

Design 1	Do not draw the packaging

Design 2	Do not draw the packaging

Tick (✓) the box to show your **best** design.

Design 1

Design 2

(b) **State three** *sensory* reasons why your best design would appeal to customers. [3]

Sensory reason 1:

Sensory reason 2:

Sensory reason 3:

