

Candidate Name	Centre Number	Candidate Number
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**GCSE**

139/04

**DESIGN AND TECHNOLOGY**

**PAPER 2**

**FOCUS AREA: FOOD TECHNOLOGY**

**Higher Tier**

A.M. MONDAY, 2 June 2008

1½ hours

	Leave Blank
<b>Question 1</b>	
<b>Question 2</b>	
<b>Question 3</b>	
<b>Question 4</b>	
<b>Question 5</b>	
<b>TOTAL MARK</b>	

**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.

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

1. The *Balance of Good Health* places foods into five main food groups.

(a) Name the groups shown in the pictures below. [3]  
One example has been given for you.

Picture 1



Picture 2



Picture 3



Picture 4



.....  
.....

Fruit and vegetables

(b) (i) State the nutritional function of the foods shown in Picture 1. [1]

.....

(ii) Name the main mineral found in the foods shown in Picture 2. [1]

.....

(iii) State the function of the main mineral found in the foods shown in Picture 2. [1]

.....

(iv) State **one** vitamin likely to be present in the foods shown in Picture 3. [1]

.....

(c) (i) People are advised to eat only *moderate* quantities of the foods shown in Pictures 1 and 2. Explain the nutritional reason for this advice. [2]

.....  
.....

(ii) Some of the foods shown in Picture 3 provide the body with *non-starch polysaccharide (NSP)*. Explain what this is and why it is important in the diet. [3]

.....  
.....  
.....  
.....

(d) Methods of food preservation can change the appearance and nutritional value of some fruits and vegetables.

(i) Describe **one** example of this problem. [2]

.....  
.....

(ii) Describe how manufacturers can overcome the problem. [2]

.....  
.....

(e) The symbols shown below appear on some food products sold in supermarkets.



Select **one** of the symbols shown by placing a tick (✓) in the box underneath it and explain how it might influence the consumer when buying food. [2]

.....  
.....  
.....




(f) Food manufacturers often warn consumers about the content of their products. Explain why they think this is important. 2 × [1]

.....  
.....

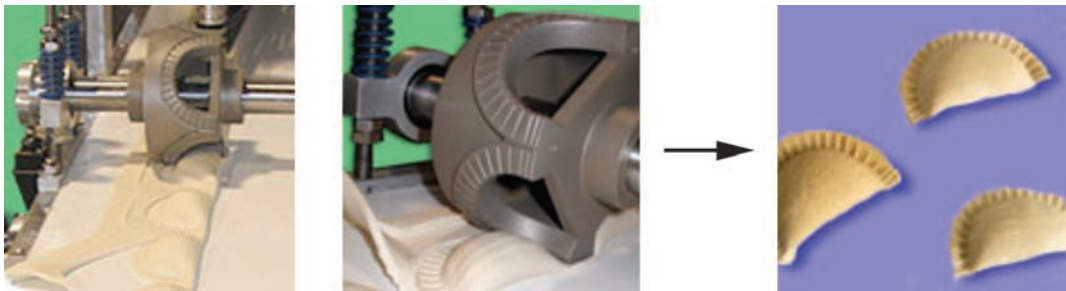
2. (a) A list of different types of pastry is given below.

**Puff pastry      Filo pastry      Short crust pastry      Choux pastry**

Complete the table below to show which pastry is the most suitable for **each** of the food products and give **one** reason for **each** choice. 3 × [3]

Food Product	Pastry Type	Reason for choice
 Quiche Lorraine	.....	..... ..... ..... .....
 Profiteroles	.....	..... ..... ..... .....
 Samosa	.....	..... ..... ..... .....

(b) The machine shown in the pictures below shows one way of making pasties in a factory.



Give **two** advantages to the manufacturer of using machines like this to make pasties. [2]

Advantage 1: .....

Advantage 2: .....

(c) The pictures below show some *prototype* pasties made by a student in a school.



List **three** different *sensory characteristics* that the student could test through prototyping. 3 × [1]

- I. ....
- II. ....
- III. ....

(d) Some foods are produced by *extrusion*. Explain what this process means and give **one** example of a food product produced in this way. [3]

Explanation: .....

.....

.....

Food Product: .....

(e) (i) Name **two** bacteria which cause food poisoning. [2]

.....

.....

(ii) Micro-organisms are used in the production of certain foods. Give **three** examples of these foods. [3]

- I. ....
- II. ....
- III. ....

3. (a) The products shown below use raising agents in their manufacture.



Bread



Cake



Yorkshire pudding

(i) Give the name of a *biological* raising agent and explain how it works.

Biological raising agent: ..... [1]

How it works: .....

..... [2]

(ii) Name **one** example of a *physical* raising agent and explain how it works.

Physical raising agent: ..... [1]

How it works: .....

..... [2]

(b) (i) State **three** *physical* changes that occur when bread dough is baked. [3]

I. ....

II. ....

III. ....

(ii) A tortilla is one example of a *flatbread*. Explain what is meant by the term *flatbread*. [2]

.....  
.....

(c) The picture below shows a new food product. The product description is given alongside.



**Chicken Balti Pizza Wrap**

Soft cumin and coriander topped wrap with tender roast chicken breast, red onion and mixed peppers with sweet tangy mango chutney.

(i) Name **one** spice stated in the product description. [1]

.....

(ii) Name **one** herb stated in the product description. [1]

.....

(d) Food technologists often *disassemble* other manufacturers' products as part of research.

(i) List **three** specific pieces of information that could be gained from disassembling the pizza wrap product as shown below. [3]



I. ....

II. ....

III. ....

- (ii) The nutrition label shown below is printed on the back of the packaging. Study the information to answer the questions that follow.

Typical Values Per Product		Guideline Daily Amount	
		Women	Men
Energy	370kcal	2000kcal	2500kcal
Protein	28.0g	45g	55g
Carbohydrate	44.4g	230g	300g
Fat of which saturates	9.2g 2.5g	70g 20g	95g 30g
Fibre	6.3g	24g	24g
Sodium/Salt	1.3g	6g	6g

I. State the energy value of the product. .... [1]

II. State the amount of fat contained in the product. .... [1]

III. Explain why manufacturers list the value for *saturated fat* separately. [2]

.....

.....

.....

IV. Explain why the consumer might be concerned about the salt content of this product. [2]

.....

.....

.....

V. Explain why men appear to need higher quantities of some nutrients compared to women. [2]

.....

.....




.....



4. (a) Food materials can be combined in different ways to produce different types of structures. Some of these are listed below.

**Gel      Solution      Foam      Emulsion**

Complete the table below to show the type of structure and how it is achieved in **each** of the food products.

Food Product	Type of structure	How the structure is achieved
 mayonnaise	..... [1]	Vegetable oil and white vinegar are whisked together with egg yolk.
 meringue	..... [1]	..... ..... ..... ..... ..... [2]
 blancmange	<p style="text-align: center;"><b>Gel</b></p>	..... ..... ..... ..... ..... [2]

- (b) Underline the correct word in **each** of the following sentences.

- A person on a coeliac diet cannot eat                      cheese / gluten / saturated fat.                      [1]
- Bread is toasted by the transfer of heat through convection / conduction / radiation. [1]
- Oily fish provides a good source of                      Vitamin B / Vitamin D / Vitamin C. [1]

5. A manufacturer is planning to develop a 'luxury' chilled dessert.

(a) **Sketch, colour and label two very different** design ideas.

**The chilled dessert must:**

- be attractive with contrasting flavours and textures;
- be single portion size and hold its own shape when all packaging is removed;
- have three or four layers, including fruit.

**Marks will be awarded for:**

- (i) the design of an *interesting single portion, layered, chilled dessert* which holds its own shape and has contrasting flavours and textures; 2 × [4]
- (ii) detailed labelling of **all** the specific food materials used to make the dessert; 2 × [3]
- (iii) quality of communication, including a **cross-section** and **dimensions** of **each** layer of the product. 2 × [4]

Design 1	Do not draw the packaging

Design 2	Do not draw the packaging

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

Design 1

Design 2

(b) State **three detailed** product specification points to help the manufacturer make your chosen idea.

*Do not repeat those included in the design specification for this question.*

[3]

Specification point 1: .....

.....

Specification point 2: .....

.....

Specification point 3: .....

.....

