

|                   |                  |                     |
|-------------------|------------------|---------------------|
| Candidate<br>Name | Centre<br>Number | Candidate<br>Number |
|                   |                  | 0                   |



**GCSE**

139/02

**DESIGN AND TECHNOLOGY**

**PAPER 2**

**FOCUS AREA: FOOD TECHNOLOGY**

**Foundation Tier**

A.M. MONDAY, 2 June 2008

1½ hours

|                   | <b>Leave<br/>Blank</b> |
|-------------------|------------------------|
| <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.

**Fruit and Vegetables    Dairy Products    Meat, Fish and Alternatives**  
**Bread and Pasta    Fats and Sugar**

(a) **Write** the correct food group under **each** of the pictures below. [3]  
*One example has been done for you.*

Picture 1



.....  
 .....

Picture 2



Dairy Products

Picture 3



.....  
 .....

Picture 4



.....  
 .....

(b) (i) The foods shown in Picture 1 contain *protein*. **Give** the function of protein in the diet. [2]

.....

(ii) The foods shown in Picture 2 contain *calcium*. **Give** the function of calcium in the diet. [2]

.....

(c) (i) Some of the foods shown in Pictures 1 and 2 contain a high percentage of animal fat. **Explain** why people are advised to eat only *moderate* amounts of these foods. [2]

.....

.....

(ii) **Give two** reasons why we should eat plenty of fruits and vegetables. 2 × [1]

Reason 1: .....

Reason 2: .....

- (d) The symbol shown below appears on the packaging of food products suitable for vegetarians.



- (i) Name **three** *different* food materials that manufacturers would **not** use if they were designing a vegetarian product. 3 × [1]

I. ....

II. ....

III. ....




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

.....  
.....

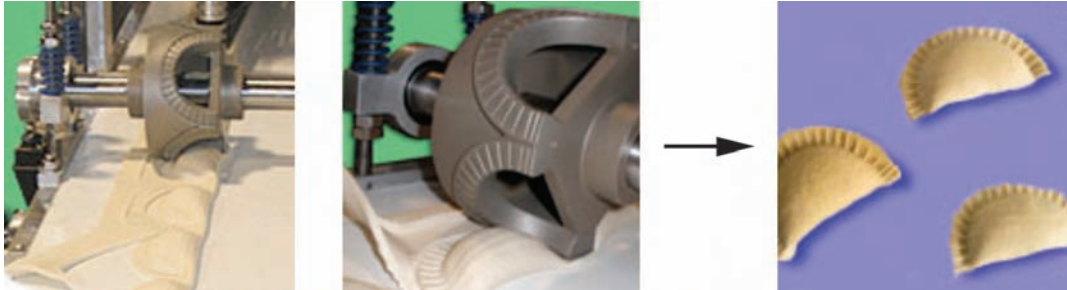
2. (a) A list of different types of pastry is given below.

**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. *One example has been done for you.* 2 × [3]

| Food Product   | Pastry Type   | Reason for choice  |
|--|---|--|
| <br>Samosa            | <p style="text-align: center;"><b>Filo pastry</b></p> | <p style="text-align: center;">Cooked filo pastry becomes very crisp and it makes a good contrast in texture to the soft filling inside.</p> |
| <br>Sausage Rolls    | <p style="text-align: center;">.....</p>              | <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>   |
| <br>Quiche Lorraine | <p style="text-align: center;">.....</p>              | <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>   |

(b) The machine 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.



(i) **Suggest two** things that the student is trying to find out. 2 × [1]

I. ....

II. ....

(ii) The flavour of the **pastry** needs to be improved. **Give two** ideas the student could try. 2 × [1]

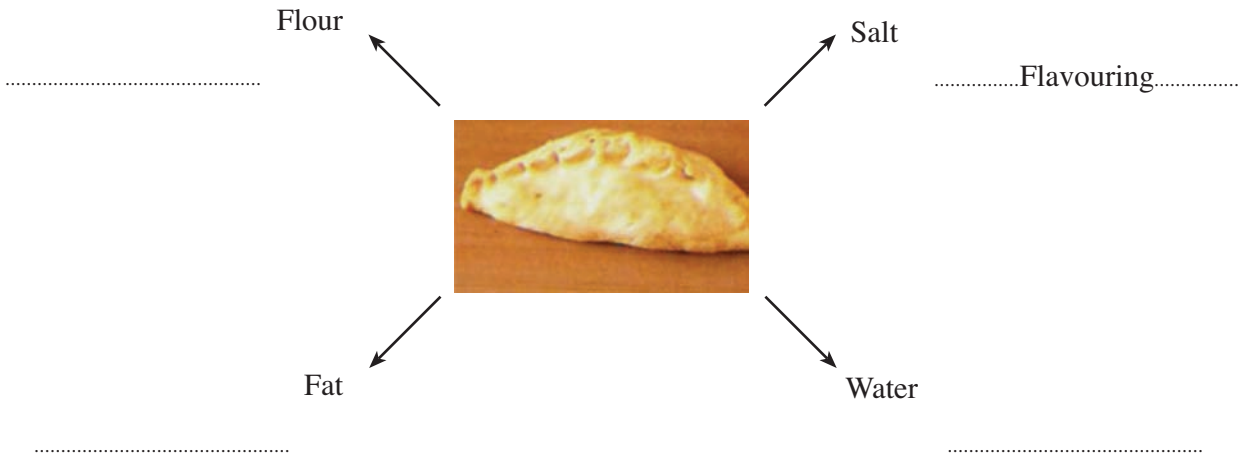
Idea 1: .....

Idea 2: .....

(iii) **Describe** how the student could improve the appearance of the surface of the pasties. [2]

.....  
 .....

- (d) The pastry for the pasties is made from flour, fat, salt and water.  
**Complete** the diagram below to show the *physical function* of **each** food material.  
*One example has been done for you.* [3]



- (e) Workers in a food factory must follow strict rules to prevent *cross contamination*.  
**Explain two** rules which should prevent cross contamination. 2 × [2]

Rule 1: .....

.....

Rule 2: .....

.....

3. (a) Cake mixtures and bread dough rise when they are baked.

In the list below, **underline two** examples of a gas which acts as a raising agent. 2 × [1]

- Air**
- Hydrogen**
- Carbon Dioxide**
- Nitrogen**

(b) (i) **Name** a food material used in a cake that helps it to rise. [1]

.....

(ii) **Explain** why it causes the cake to rise. [2]

.....

.....

.....



(c) (i) **Name** a food material used in bread that helps it to rise. [1]

.....

(ii) **Explain** why it causes the bread to rise. [2]

.....

.....

.....



(d) Other than rising, **state two** physical changes that occur when bread dough is baked in the oven. 2 × [1]

Change 1: .....

Change 2: .....

(e) A tortilla is one example of a *flatbread*. **Name one** other example of a flatbread. [1]

.....

(f) 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]

.....

(iii) 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                    | 28g     | 45g                    | 55g      |
| Carbohydrate               | 44.4g   | 230g                   | 300g     |
| Fat                        | 9.2g    | 70g                    | 95g      |
| Fibre                      | 6.3g    | 24g                    | 24g      |
| Sodium/Salt                | 1.3g    | 6g                     | 6g       |

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

II. **State** the energy value of the product. [1]

III. **Give one** reason why men appear to need higher quantities of some nutrients compared to women. [2]

.....  
 .....



- (iv) Food technologists often disassemble other manufacturers' products as part of research.

**List two** specific pieces of information that could be gained by disassembling the pizza wrap shown below. 2 × [1]



I. ....

II. ....

- (g) **State two** ways of using CAD to develop food products. [2]

I. ....

II. ....

4. (a) Food materials can be combined to produce different types of structures.  
From the list below choose the correct structure for **each** of the products shown. 3 × [1]

**Foam      Emulsion      Solution      Gel**

Blancmange



Meringue



Mayonnaise



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

- A person on a coeliac diet cannot eat cheese / saturated fat / gluten. [1]
- Quorn is manufactured from soya beans / a type of fungus / chicken. [1]
- Oily fish provides a good source of Vitamin C / Vitamin D / Vitamin B. [1]
- Pasta is produced by extrusion / enrobing / moulding. [1]
- Bread is toasted by the transfer of heat through convection / conduction / radiation. [1]

- (c) A food manufacturer is developing a new range of healthy breakfast bars called *1 of 5* containing cereals, fruit and nuts.

**Design** an eye-catching image to go on the front of the wrapper.

**Marks will be awarded for:**

- (i) an imaginative image including the name of the product; [4]
- (ii) showing what the breakfast bar contains; [2]
- (iii) the use of colour and the quality of communication. [3]

Front of wrapper →



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 the 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** *sensory* reasons why your best idea would appeal to customers. [3]

Sensory reason 1: .....

.....

Sensory reason 2: .....

.....

Sensory reason 3: .....

.....

