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|----------------|---------------|------------------|
| Candidate Name | Centre Number | Candidate Number |
|                |               |                  |

WELSH JOINT EDUCATION COMMITTEE  
General Certificate of Secondary Education



CYD-BWYLLGOR ADDYSG CYMRU  
Tystysgrif Gyffredinol Addysg Uwchradd

270/02

**GCSE  
DESIGN AND TECHNOLOGY**

**SHORT COURSE**

**FOCUS AREA: FOOD TECHNOLOGY**

(Higher Tier - Grades D to A\*)

P.M. TUESDAY, 5 June 2007

(1 Hour)

|                   |                        |
|-------------------|------------------------|
|                   | <b>Leave<br/>Blank</b> |
| <b>Question 1</b> |                        |
| <b>Question 2</b> |                        |
| <b>Question 3</b> |                        |
| <b>Question 4</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.

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

*Answer all questions in the spaces provided.*

1. (a) A designer needs to carry out research before designing a new toy for a three-year-old child.



Some research activities are shown in the table below. Complete the table by stating what important information can be found from these activities. *One example has been done for you.* 3 × [2]

| Research Activity                      | Outcomes of research   |
|--|--|
| Talk to a three-year-old child         | <i>To establish the types of activities that are popular with three-year-olds.</i> |
| Look at anthropometric data            | .....<br>.....   |
| Read a book on child development       | .....<br>.....   |
| Look at a materials properties website | .....<br>.....   |

(b) Give **three** safety concerns that a parent may have when buying a toy. 3 × [1]

Concern 1: .....

.....

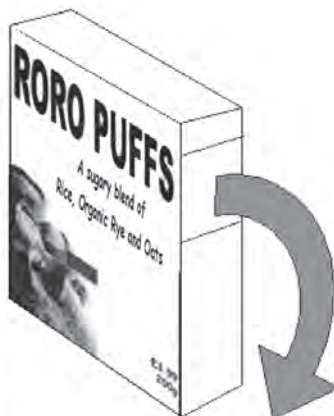
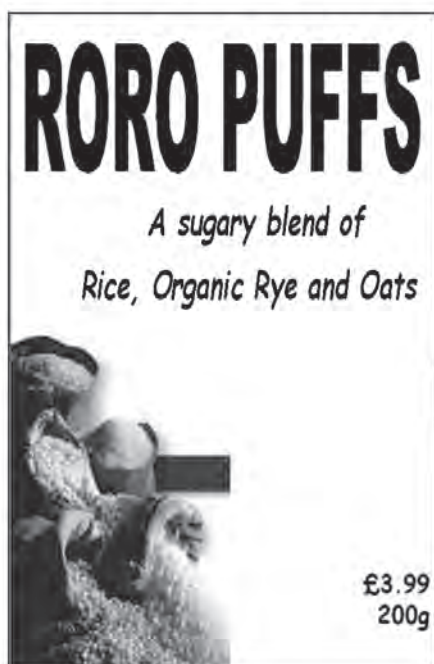
Concern 2: .....

.....

Concern 3: .....

.....

2. Sales of the breakfast cereal shown below are falling.



|  |                              |                                 |                                   |
|--|------------------------------|---------------------------------|-----------------------------------|
| Ingredients:<br>Rice, rye, oats, honey, sugar, salt. |                              |                                 |                                   |
|  | Guideline<br>daily<br>amount | Each<br>serving<br>with<br>milk | %<br>guideline<br>daily<br>amount |
| Calories   | 2000kcal                     | 170kcal                         | 8%                                |
| Sugar  | 90g                          | 27.8g                           | 30%                               |
| Salt   | 6g                           | 0.8g                            | 14%                               |
| Saturated<br>fat                                     | 20g                          | 2.4g                            | 12%                               |
| Fat  | 70g                          | 4.0g                            | 6%                                |

(a) Study the pictures shown and give **two** reasons why you think sales of this cereal have fallen. 2 × [2]




Reason 1: .....

.....

Reason 2: .....

.....

(b) The pictures below show three kettles.

|                |   |   |   |
|----------------|---|---|---|
|                |  |  |  |
| Kettle         | A   | B   | C   |
| Cost           | £4.99   | £19.99  | £37.99  |
| Materials      | White Plastic   | Stainless Steel   | Thermochromic Plastic   |
| Where made     | China   | Europe  | UK  |
| Water capacity | 1.5 Litres  | 1 Litre   | 2.3 Litres  |

- (i) Even though it is expensive, some people would decide to buy kettle C. Give **one** reason for this. [2]

.....  
 .....

- (ii) Give **two** reasons why kettle A can be sold at this price.  $2 \times [2]$

Reason 1: .....

.....

Reason 2: .....

.....

- (iii) Kettle C uses a thermochromic plastic. Give **two** benefits of using this material.  $2 \times [2]$

Benefit 1: .....

.....

Benefit 2: .....

.....

3. (a) One part of the design process is called *development*. One development activity might be to consider a range of possible colours for a product. List **three** other activities that are part of development. 3 × [1]

Activity 1: .....

Activity 2: .....

Activity 3: .....

- (b) Name a specific ICT/CAD package and explain how it could be used to help with the development of a new product.

Name of package ..... [1]

Use in development ..... [2]

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

- (c) For a product of your choice, describe **two** benefits of using CAM (computer aided manufacturing) to make the product. 2 × [1]

Product .....

Benefit 1: .....

Benefit 2: .....

- (d) Describe **two** environmental issues that should be taken into account when *designing* products. 2 × [2]

Issue 1: .....

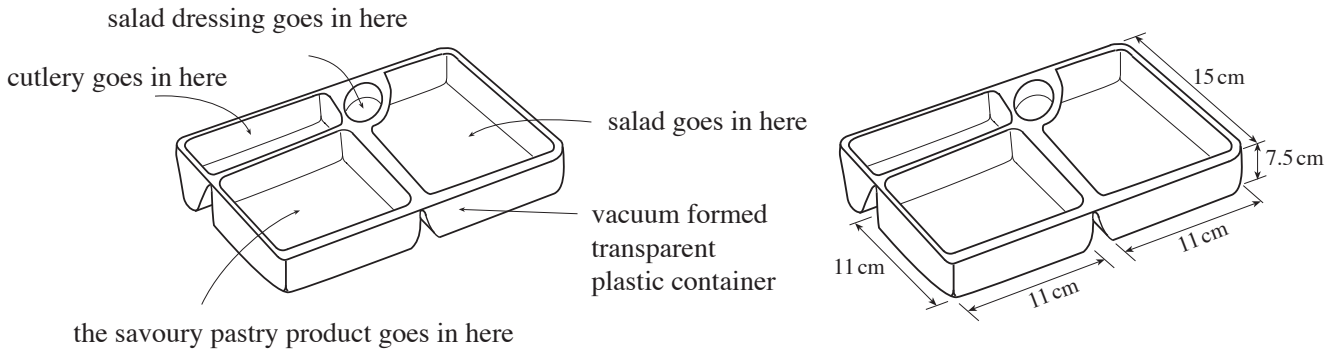
.....

Issue 2: .....

.....

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4. 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) Give **three detailed** product specification points for manufacturing your chosen design.  
*Do not repeat those included in the question.* [3]

Specification point 1: .....

.....

Specification point 2: .....

.....

Specification point 3: .....

.....

