



**GCSE**

**4091/01**

**DESIGN AND TECHNOLOGY**

**UNIT 1**

**FOCUS AREA: Food Technology**

**A.M. TUESDAY, 19 May 2015**

**2 hours plus your additional time allowance**

**Surname** \_\_\_\_\_

**Other Names** \_\_\_\_\_

**Centre Number** \_\_\_\_\_

**Candidate Number** 0 \_\_\_\_\_

<b>For Examiner's use only</b>			
	<b>Question</b>	<b>Maximum Mark</b>	<b>Mark Awarded</b>
<b>Section A</b>	<b>1.</b>	<b>15</b>	
	<b>2.</b>	<b>10</b>	
	<b>3.</b>	<b>10</b>	
	<b>4.</b>	<b>25</b>	
<b>Section B</b>	<b>5.</b>	<b>10</b>	
	<b>6.</b>	<b>15</b>	
	<b>7.</b>	<b>20</b>	
	<b>8.</b>	<b>15</b>	
	<b>Total</b>	<b>120</b>	

## **ADDITIONAL MATERIALS**

**You will need basic drawing equipment, coloured pencils and a calculator for this examination.**

## **INSTRUCTIONS TO CANDIDATES**

**Use black ink, black ball-point pen or your usual method.**

**Write your name, centre number and candidate number in the spaces provided on the front cover.**

**Answer ALL questions.**

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

**You are reminded of the necessity for good English and orderly presentation in your answers.**

## **INFORMATION FOR CANDIDATES**

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



**Product description:**  
Ready to eat vegetarian wrap.  
With soy sauce, pickled  
ginger and wasabi sachet.

**Main ingredients:**  
Sushi rice, mixed vegetable  
strips, seaweed, egg and  
vegetable based wrap.

**SECTION A**

**MARKED OUT OF 60      60 MINUTES**

1.      **This question is about Product Analysis. It is worth a total of 15 marks.**

**The photographs opposite show a sushi style vegetarian wrap.**

**Product information:**

- **Single portion size;**
- **Cost £3.00;**
- **Weight 210g;**
- **Ready to eat;**
- **Must be kept refrigerated.**

- (a)      A vegetable based wrap has been used to form the outer layer of the product.  
State why the wrap has been used.    [1]**

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- 1(b) The sushi style vegetarian wrap has been cut in half before being packaged.  
Explain why the manufacturer has presented the wrap in this way. [2]**

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- (c) Explain why the soy sauce, pickled ginger and wasabi sachet are packaged separately by the manufacturer. [2]**

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**1(d) Name ONE ingredient used in the product that could be considered unsafe to a consumer if not stored correctly. Explain why this ingredient could be harmful to the consumer.**

**Ingredient:** \_\_\_\_\_

\_\_\_\_\_

**[1]**

**Explanation:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[2]**

**(e) The sushi style vegetarian wrap includes seaweed. Give TWO different reasons why the seaweed has been included. [2]**

**Reason 1:** \_\_\_\_\_

\_\_\_\_\_

**Reason 2:** \_\_\_\_\_

\_\_\_\_\_

**1(f) Before starting to design the sushi style vegetarian wrap a design specification was written. Write a detailed specification point for the following heading.**

**The function of the sushi style vegetarian wrap. [2]**

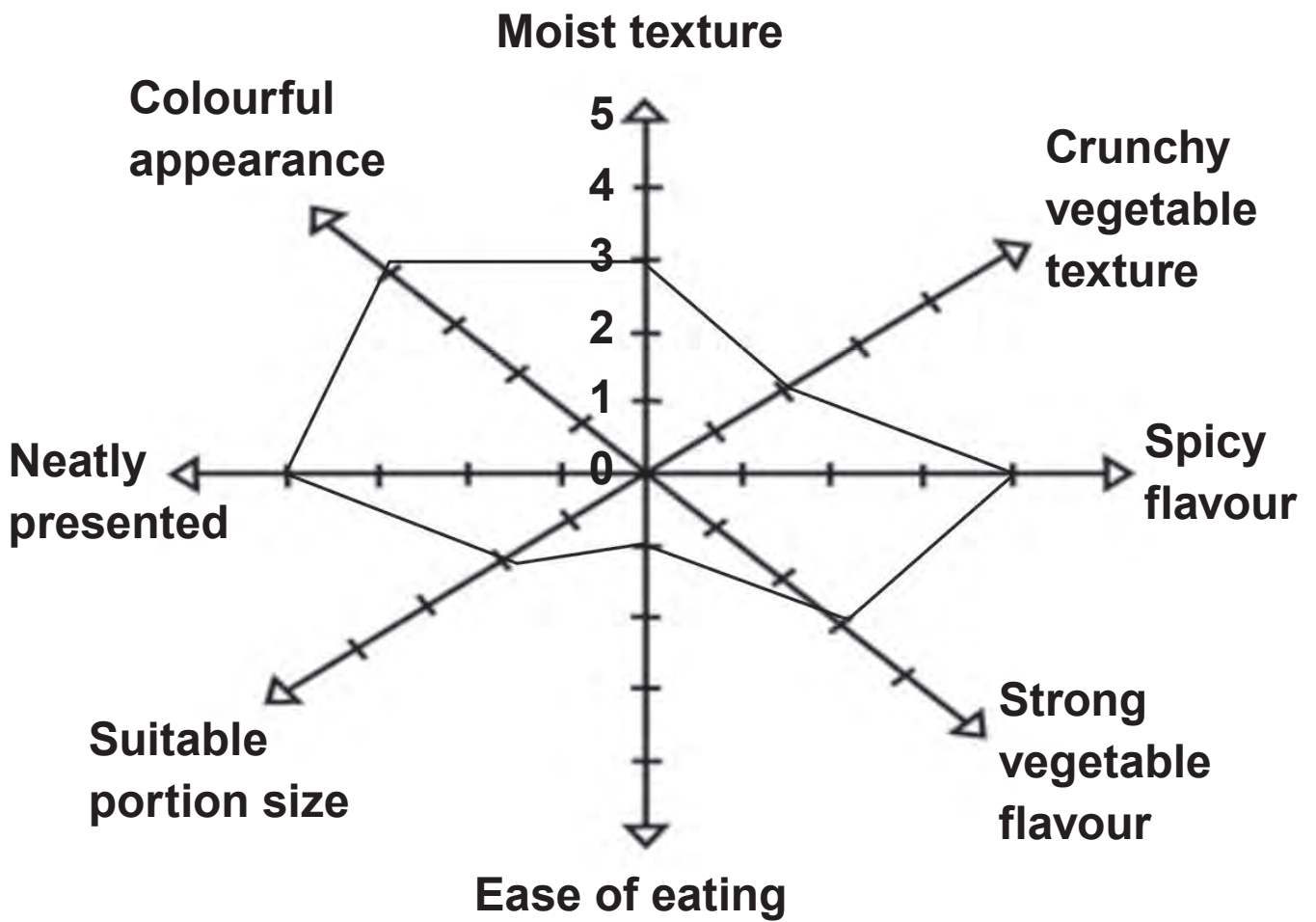
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**1(g) The star profile opposite shows the taste test results for the sushi style vegetarian wrap.**

**NOTE: THE LOWEST IS 1, THE HIGHEST IS 5.**

**(i) Calculate the total score awarded for the sushi style vegetarian wrap. [1]**

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**(ii) The maximum score available for texture and flavour is 20.  
Calculate as a percentage (%) for texture and flavour the actual total that the product has achieved. [2]**

**(SHOW ALL YOUR WORKINGS.)**

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2. This question is about the general issues of Design and Technology. It is worth a total of 10 marks.

(a) Complete the table by correctly naming EACH logo shown opposite. 2 × [1]

(b) (i) Designers of sustainable products consider the six Rs. Name the TWO missing Rs in the list below. 2 × [1]

REUSE

RECYCLE

REFUSE

REDUCE

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**2(b) (ii) Explain how a consumer could apply the R 'refuse' when shopping in a supermarket.**

**[3]**

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**2(c) Explain what is meant by the term 'lifecycle' in relation to a food product. [3]**

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3. This question is about the Designers that you have studied. It is worth 10 marks.

During your course you have studied the work of Jamie Oliver and Delia Smith.

(a) State the name of the designer that matches the information. [2]

	INFORMATION	NAME OF DESIGNER
(i)	First job was as a hairdresser. Worked at the restaurant 'The Singing Chef'.	<hr/>
(ii)	Practised cooking in the pub kitchens of 'The Cricketers'. Created the restaurant training Programme Fifteen.	<hr/>







<b>TERM</b>	<b>MEANING</b>
	<b>The testing of ideas before the final make.</b>
	<b>Short statement that outlines the problem to be solved.</b>
	<b>Things to explore before designing.</b>

4. This question is about the Design Process and how it is used. It is worth a total of 25 marks.

(a) Complete the table opposite by selecting the correct term from the list to match EACH meaning.

3 × [1]

Prototyping

Specification

Research

Design brief

(b) Name ONE piece of information that is included in a plan for making. [1]

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**4(c) Evaluation must take place as your research progresses. Explain when evaluation could take place during research and why it is important. [3]**

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- 4(d) **A manufacturer is planning to extend its range of dessert products by introducing a sweet dessert that is served and eaten hot.**

**Specification.**

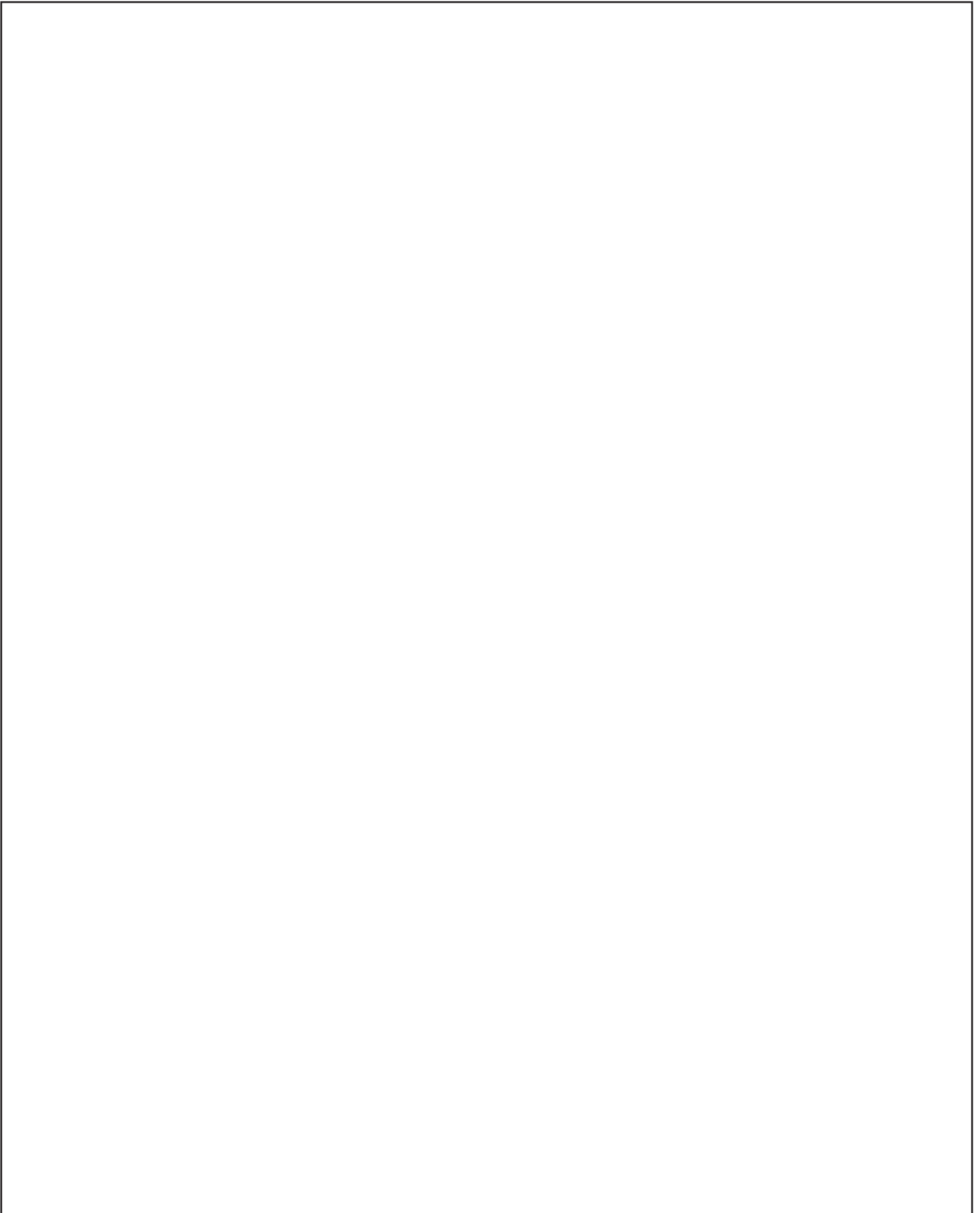
**THE DESIGN MUST:**

- **be a sweet dessert product;**
- **be suitable for serving and eating hot;**
- **include a sauce to be served with it;**
- **include foods that would give a combination of flavours;**
- **include fruit;**
- **contain a range of foods that provide different textures;**
- **provide a good source of calcium.**

**MARKS WILL BE AWARDED FOR:**

- (d)(i) a sweet dessert product that is suitable for serving and eating hot; [2]**
- (ii) including an interesting sauce to be served with it; [2]**
- (iii) including foods that would give a combination of flavours; [2]**
- (iv) including fruit in the sweet dessert; [1]**
- (v) including foods that will give different textures in the sweet dessert; [2]**
- (vi) stating the good source of calcium; [1]**
- (vii) labelling all the food materials used to make the sweet dessert and sauce; [4]**
- (viii) quality of communication to include a design drawing. [4]**

**Draw and label your design in the box below.**

A large, empty rectangular box with a thin black border, intended for a student to draw and label their design. The box occupies most of the lower half of the page.

<b>STATEMENT</b>	<b>TRUE</b>	<b>FALSE</b>
<b>Batch production allows for different fillings to be added when a bakery is making set amounts of meat pies.</b>		
<b>Continuous flow production requires highly skilled workers to carry out making tasks.</b>		
<b>Mass production is when small numbers of many products are manufactured on an assembly line.</b>		



**SECTION B**

**MARKED OUT OF 60      60 MINUTES**

**5. This question is about Commercial Manufacturing Processes. It is worth a total of 10 marks.**

**(a) Put a TICK (✓) in the grid opposite to indicate whether the statements are true or false.      3 × [1]**

**(b) A custom made anniversary cake like the one shown below has been produced using one-off production. Give ONE detailed disadvantage to the consumer when having a cake made by this method. [2]**



**Disadvantage:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5(c) The picture below shows a pastry based fruit tart made using batch production.



The decoration of the top of the fruit tart would be completed by workers by hand instead of using machines. Explain why this method would be used for this stage. [2]

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**5(d) The machine shown in the picture below is a mandolin slicer. It is used in small scale production during the manufacturing of many fruit and vegetable based products.**



**(i) State ONE health and safety advantage of using the mandolin slicer to prepare vegetables. [1]**

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**(ii) Explain how using this piece of machinery can be more beneficial to the user in relation to sizes of vegetable pieces. [2]**

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<b>PRODUCT</b>	<b>SENSORY CHARACTERISTIC</b>	<b>IMPROVEMENT</b>
<p>(i)</p> 	<p>Plain taste</p>	<hr/> <hr/> <hr/> <hr/>
<p>(ii)</p> 	<p>Appearance/ browning of pastry product</p>	<hr/> <hr/> <hr/> <hr/>

6. This question is about Materials and Components. It is worth a total of 15 marks.

(a) Complete the table opposite by suggesting an improvement for EACH product to improve the sensory characteristic identified. 2 × [1]

(b) The picture below shows some Chelsea buns made using an enriched yeast mixture.



Name ONE ingredient that is used to enrich the yeast mixture when making the Chelsea buns and explain how the ingredient enriches the mixture.

Ingredient: \_\_\_\_\_ [1]

Explanation: \_\_\_\_\_

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6(c) The picture below shows a Bakewell tart.



Name the **THREE** different component parts of the Bakewell tart. [3]

Part 1: \_\_\_\_\_

Part 2: \_\_\_\_\_

Part 3: \_\_\_\_\_

**6(d) Eggs are one of the main ingredients used to make many different food products.**



**(i) Name the main nutrient found in eggs. [1]**

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**(ii) Explain in detail what happens to the nutrient when heat is applied during the cooking process. [3]**

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**6(e) Give ONE detailed reason why a manufacturer may use antioxidants in the manufacturing of a food product. [3]**

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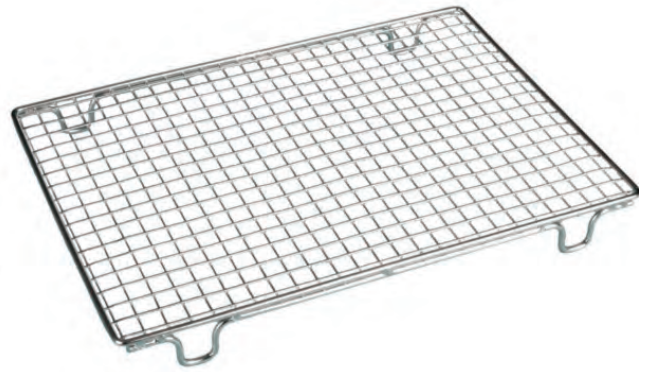
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7. This question is about Tools, Equipment and Making. It is worth a total of 20 marks.

(a) Name the FOUR equipment pieces shown opposite. 4 × [1]

(b) (i) The picture below shows a food processor. Name TWO safety points that must be checked before the food processor can be used. 2 × [1]

	<b>SAFETY POINT</b>
	1. _____ _____ _____ _____ _____
	2. _____ _____ _____ _____ _____

7(b) (ii) A food processor is a labour saving device. Name TWO processes it can be used for during the making of a cheese and vegetable pasty to save both energy and time. 2 × [1]

Process I: \_\_\_\_\_

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Process II: \_\_\_\_\_

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7(c) The picture below shows some rock buns.



(i) Name TWO main ingredients that would be used in the making of the rock buns. 2 × [1]

I: \_\_\_\_\_

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II: \_\_\_\_\_

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(ii) Name the term given to describe the consistency of the rock bun mixture when all the ingredients have been combined. [1]

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**Use this space for sketches.**

7(d) The picture opposite shows a biscuit product with chocolate feathering as a form of decoration.

Using notes and sketches explain how the chocolate feathering decoration has been added to the top of the biscuit. [5]

Notes:

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7(e) Name a method of thickening that could be used in the making of the fresh tomato sauce pictured below and explain how the named method thickens the sauce.



Method of thickening: \_\_\_\_\_

[1]

Explanation: \_\_\_\_\_

[3]

8. This question is about ICT, CAD, CAM, Systems and Processes. It is worth a total of 15 marks.

(a) Draw a line to join EACH design-related task below to the correct ICT software. 3 × [1]

Make a bar chart

Internet search engine

Download an image

Word processor

Check spelling and grammar

Spreadsheet

(b) State the full meaning of CPU. [1]

Central

P \_\_\_\_\_

Unit



**8(c) Production systems are used when manufacturing food products.**

**Place a TICK (✓) in the correct box to indicate the correct stage of production for the statements shown below. 5 × [1]**

<b>STATEMENT</b>	<b>INPUT</b>	<b>PROCESS</b>	<b>OUTPUT</b>
<b>Ingredients</b>			
<b>Finished food product</b>			
<b>Equipment</b>			
<b>Creaming the raw materials</b>			
<b>Baking and decorating</b>			

**8(d) Computer Aided Design (CAD) is used in the food industry.**

**Explain how Computer Aided Design (CAD) could be used during:**

**(i) The modelling and developing of a food product. [2]**

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**(ii) The designing stages. [2]**

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**8(e) Explain why a manufacturer may use a computer to control the adding of ingredients to a product.**

**[2]**

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**END OF PAPER**



