

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

**Design and Technology:
Food Technology
Unit 2: Knowledge and Understanding of
Food Technology**

Sample Assessment Material

Time: 1 hour 30 minutes

Paper Reference

5FT02/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches it must be dark (HB or B). Coloured pens, pencils and highlighter pens must **not** be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL the questions.

For each question 1 to 10, choose an answer A, B, C or D. Put a cross in the box indicating the answer you have chosen . If you change your mind about an answer, put a line through the box and then mark your new answer with a cross .

1 A vegan diet would **not** include any:

- A dairy products
- B fish products
- C meat products
- D dairy, fish or meat products

(Total for Question 1 = 1 mark)

2 A primary research method would be:

- A questionnaire
- B recipe books
- C information from the internet
- D leaflets from a supermarket

(Total for Question 2 = 1 mark)

3 Fish is a good source of:

- A protein
- B fibre
- C vitamin C
- D water

(Total for Question 3 = 1 mark)

4 How can the results of sensory analysis be recorded?

- A As a star profile
- B On a computer spreadsheet
- C On a graph
- D All the above

(Total for Question 4 = 1 mark)



5 Not all micro-organisms are harmful.

Micro-organisms are used in the production of which one of the following foods?

- A Cake
- B Blue cheese
- C Juice
- D Cream

(Total for Question 5 = 1 mark)

6 Where are cook-chill foods stored in a supermarket?

- A Dry goods shelf
- B Freezer cabinet
- C Refrigeration cabinet
- D Bakery basket

(Total for Question 6 = 1 mark)

7 Manufacturers use colour coded equipment for food preparation.

What is the recommended colour of a chopping board for raw meat?

- A Green
- B Yellow
- C Red
- D Blue

(Total for Question 7 = 1 mark)

8 The danger zone is a temperature control used in food preparation.

What is the temperature range used in the danger zone?

- A 18°C to -35°C
- B 5°C to 63°C
- C 37°C to 100°C
- D 0°C to 4°C

(Total for Question 8 = 1 mark)



9 The deficiency disease for iron is:

- A scurvy
- B kwashiorkor
- C anaemia
- D beri beri

(Total for Question 9 = 1 mark)

10 In what order are ingredients listed on a food product label?

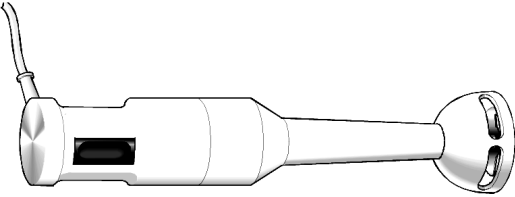
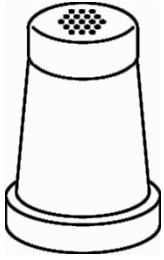
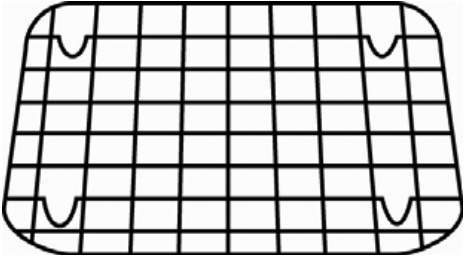
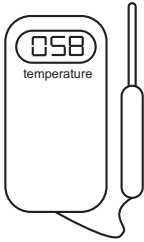
- A alphabetical order
- B descending order of weight
- C ascending order of weight
- D random order

(Total for Question 10 = 1 mark)



11 (a) The table below shows some tools and equipment.

Complete the table below by giving the missing names and uses.

Tool/Equipment	Name	Use
	Blender	(1)
	Flour dredger	(1)
		To cool baked products (1)
		To check the internal temperature of food products (1)



(b) One way a food processor can be used is for rubbing fat into flour.

Give **three** other ways a food processor can be used to prepare foods.

(3)

- 1
- 2
- 3

(c) Electrical safety rules must be followed when using a food processor.

Give **three** other safety rules to follow when using a food processor.

(3)

- 1
- 2
- 3

(d) When food products are manufactured in volume, different quantities may need to be made. Biscuits are made in batches.

Give **three** reasons why biscuits are made in batches.

(3)

- 1
- 2
- 3

(e) Loaves of white sliced bread are made in high volume.

Give **two** reasons why loaves of white sliced bread are made in high volume.

(2)

- 1
- 2



(f) The following recipe was used to produce a prototype bread product.

500 g strong plain flour

50 g butter

1 sachet dried easy blend yeast

1tsp salt

1tsp sugar

Water to mix to a dough

Describe **two** modifications that would make the bread product suitable for a consumer wanting a multicultural bread product.

(4)

1

.....

2

.....

(Total for Question 11 = 19 marks)



12 A manufacturer is developing a new hot dessert product that is suitable for the elderly.

The specification for the hot dessert product is that it must:

- be suitable for elderly people
- be filling
- be a single portion
- be suitable to be reheated
- have a range of textures
- be fruit flavoured
- include one protein food
- include one ingredient high in fibre.

In the spaces opposite, use sketches and, where appropriate, brief notes to show **two different** design ideas for the hot dessert product that meet the specification points above.

Candidates are reminded that if a pencil is used for diagrams/sketches it must be dark (HB or B).

Coloured pens, pencils and highlighter pens must **not** be used.

PLEASE DO NOT WRITE OR DRAW IN THIS SPACE.

PLEASE USE THE SPACES OPPOSITE FOR YOUR DESIGNS.



Design idea 1

(8)

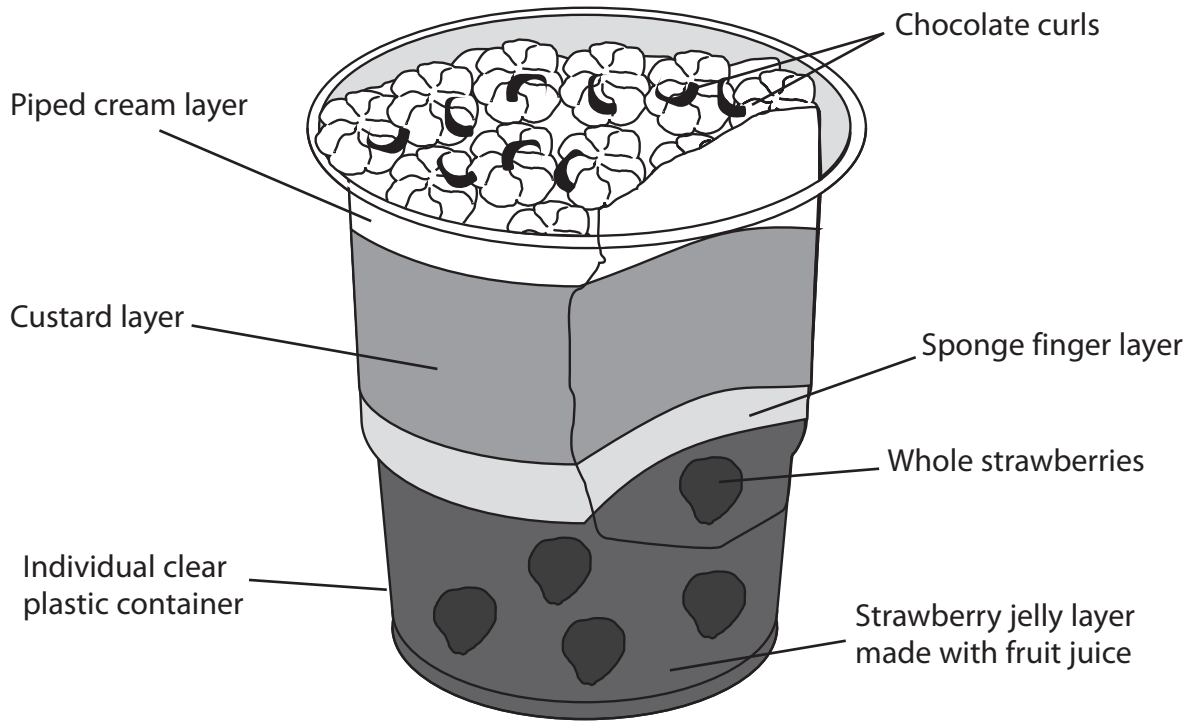
Design idea 2

(8)

(Total for Question 12 = 16 marks)



13 The image below shows an individual fruit trifle that is sold in the chilled section of a supermarket.



(a) The fruit trifle contains a sponge finger layer.

Give **one** property of the sponge finger layer that makes it suitable for the trifle. Justify your answer.

(2)

Property

Justification

(b) The cream layer has been piped.

Give **two** advantages to the manufacturer of using this method of preparation.

(2)

- 1
- 2



(c) Give **two** reasons why the chocolate curls are a suitable finish for the fruit trifle.

(2)

1

2

(d) Explain why the fruit trifle is successful at meeting the following specification points:

(i) encourage people to eat more fruit each day

(2)

.....

.....

(ii) be eye-catching to attract consumers.

(2)

.....

.....



*(e) A food manufacturer produces a range of desserts.

Below are two methods for making a trifle.

Method A	Method B
<ul style="list-style-type: none"> • Assemble and weigh ingredients. • Line serving container with sponge finger layer or sliced swiss roll pieces. • Wash and slice fresh strawberries. Place fruit onto sponge base. • Place two tablespoons of strawberry jam over the fruit. • Make custard using eggs, sugar and milk or instant custard powder, sugar and milk. Place in a small saucepan, over a low heat and allow to gently thicken, stirring all the time to prevent lumps. • Once custard is cool, pour custard over fruit layer. Chill in fridge. • Whisk double cream until thick. • Using a piping bag, pipe cream over custard. • Sprinkle chocolate curls over top of trifle. • Serve 	<ul style="list-style-type: none"> • Assemble pre-weighed ingredients. All ingredients checked for quality using control systems. • Automated assembly of sponge base (standard component) into plastic container. • Automated assembly of (standard component) sterilised fruit layer using depositor. • Automated assembly of (standard component) custard mixture using depositor. • Cream layer piped onto custard layer using injector/depositor equipment. • Conveyor belt to refrigeration tunnel – blast chilling. • Packaging and labelling of food product for distribution for retail.



Evaluate method A compared with method B for use by a food manufacturer.

(6)

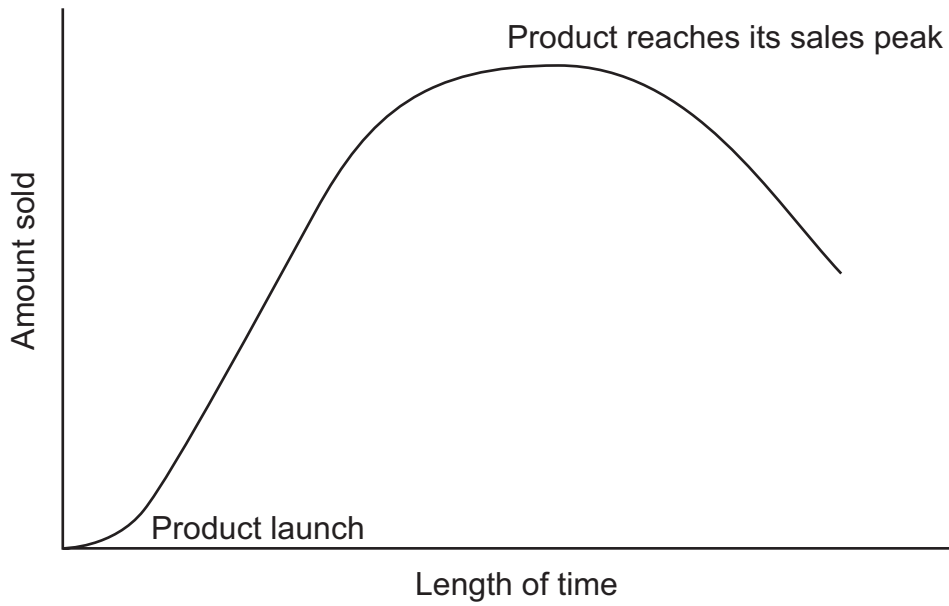
Area with horizontal dotted lines for writing the answer.

(Total for Question 13 = 16 marks)



14 Food manufacturers need to consider the life cycle of a product.

The diagram below shows the life cycle of a food product.



(a) (i) Describe why product sales fall after a period of time.

(2)

.....

.....

.....

.....

(ii) Outline **one** strategy a manufacturer could use to increase the sales of a pasta bake.

(2)

.....

.....

.....

.....



(b) A pasta bake ready meal is sold as a cook-chill product.

Explain **one** way in which the cook-chill process makes the pasta bake safe to eat.

(2)

.....

.....

.....

.....

(c) The pasta bake ready meal is usually sold in packaging containing several layers.

Give **three** ways in which the environment would benefit if the amount of packaging was reduced.

(3)

1

2

3

(d) Describe **two** ways in which the consumer can help reduce the environmental impact of packaging.

(4)

1

.....

2

.....



Mark Scheme

Sample Assessment Material

GCSE

GCSE Design & Technology: Food Technology (5FT02/01)

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1.	D	(1)

Question Number	Answer	Mark
2.	A	(1)

Question Number	Answer	Mark
3.	A	(1)

Question Number	Answer	Mark
4.	D	(1)

Question Number	Answer	Mark
5.	B	(1)

Question Number	Answer	Mark
6.	C	(1)

Question Number	Answer	Mark
7.	B	(1)

Question Number	Answer	Mark
8.	B	(1)

Question Number	Answer	Mark
9.	C	(1)

Question Number	Answer	Mark
10.	B	(1)

Question Number	Answer	Mark
11.(a)	Blender	mixing/crumbing/blending/pureeing fruit, vegetables, bread, baby food, soups, ingredients. (1)
	Flour dredger	dredging/sprinkling/shaking/dusting flour, icing sugar, caster sugar, cocoa powder. (1)
	Cooling rack/ cool rack/cool wire (1)	To cool baked products.
	Food probe/industrial or commercial thermometer. <i>[Do not accept thermometer]</i> (1)	To check the internal temperature of food products.
	4 x 1	(4)

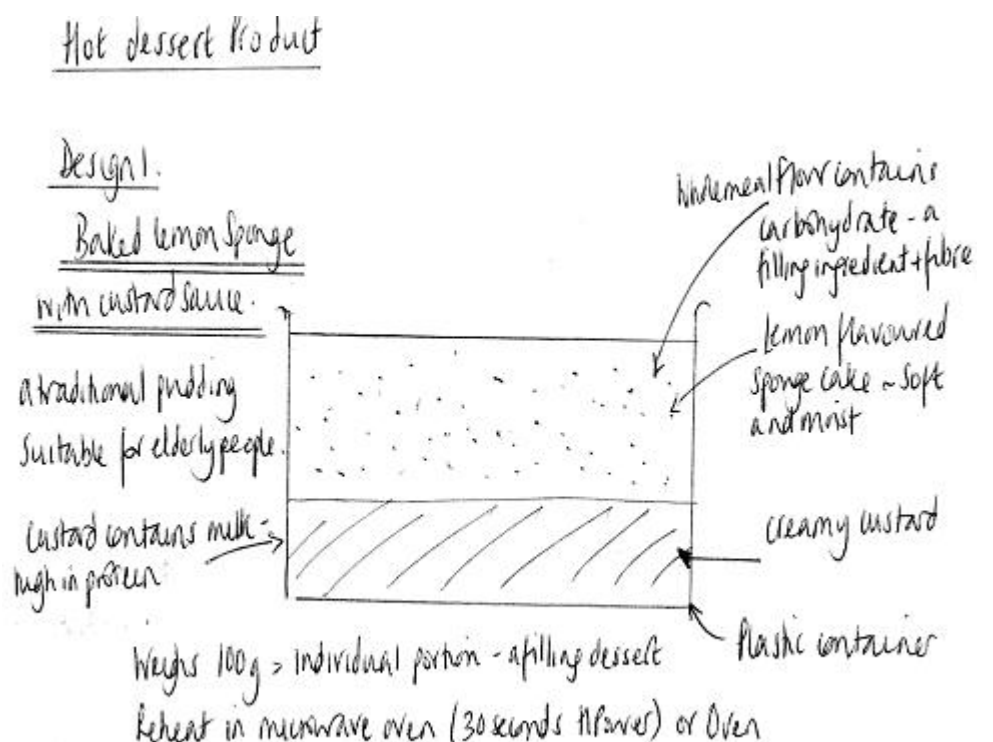
Question Number	Answer	Mark
11.(b)	<p>Give three other ways from:</p> <ul style="list-style-type: none"> • Whisking/whipping (1) • Chopping/cutting (1) • Grating (1) • Shredding (1) • Blending/pureeing/pulping/liquidising/mashing (1) • Mixing/creaming/beating margarine and sugar (1) • Chipping (1) • Slicing (1) • Kneading (1) • Mincing (1) 	(3)
	3 x 1	(3)

Question Number	Answer	Mark
11.(c)	<p>Give three other safety rules from:</p> <ul style="list-style-type: none"> • Do not overfill/do not put too much in (1) • Assemble properly/securely/put lid on correctly (1) • Use tabs/holes/flat bits on blades/attachments (1) • Wash blades/attachments with a brush (1) • Wash at high temperatures/in dishwasher to remove bacteria (1) • Use tube/funnel to add ingredients (1) • Do not put hands in when in operation (1) • Do not touch with wet hands (1) • Do not use near water (1) 	(3)
	3 x 1	(3)

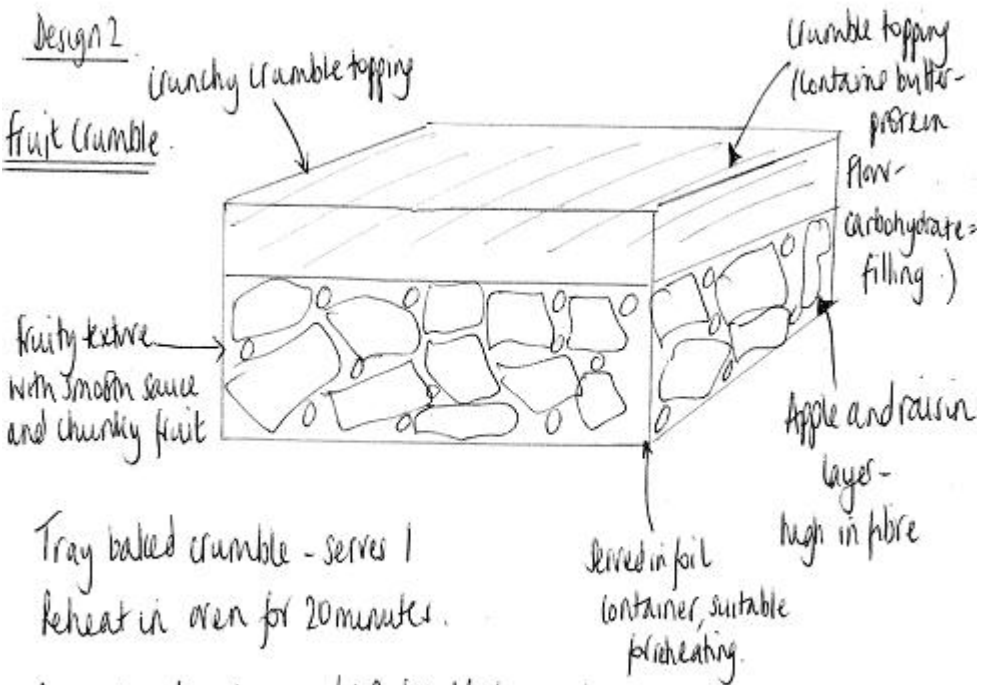
Question Number	Answer	Mark
11.(d)	<p>Give three reasons from:</p> <ul style="list-style-type: none"> • High demand/popular product/sell well/lots bought/sold (1) • Good shelf life/store well (1) • Cheaper to make (1) • Different varieties produced/can get other flavours/styles / to alter product line (1) • Seasonal varieties needed/ special occasions (1) • Can keep costs down (purchasing in bulk) (1) <p style="text-align: right;">3 x 1</p>	(3)

Question Number	Answer	Mark
11.(e)	<p>Give two reasons from:</p> <ul style="list-style-type: none"> • High demand/large amounts needed/popular product (1) • Staple food/carbohydrate food used for energy (1) • Reduces costs to manufacturer/consumer (1) • Versatile product with many different uses (1) <p style="text-align: right;">3 x 1</p>	(2)

Question Number	Answer	Mark
11.(f)	<p>Describe two modifications from:</p> <ul style="list-style-type: none"> • Add a savoury flavouring: e.g. garlic/ cheese/ herbs/ cured meat/ spices (1) to bread recipe to add flavours and ingredients from different parts of the world.(1) • Add sweet flavourings: e.g. dried or fresh fruit to recipe (1) to add flavours and ingredients from around the world. (1) • Glaze the bread using a sugar/syrup/honey/ icing (1) to enhance appearance (1) • Shape the bread into loaves/rolls/ baguettes/croissants/flat bread/naan/ciabatta/focaccia (1) to recreate the multicultural bread products from around the world.(1) • Remove the yeast to create unleavened bread such as naan (1) and/or add alternative raising agent such as baking soda. (1) <p style="text-align: right;">2 x 2</p>	(2)

Question Number	Answer	Mark
12.	<p>Design idea 1</p> <p>Candidates may answer any specification point in either graphical form or by annotation.</p> <p>No marks are awarded for the quality of graphical communication.</p> <ul style="list-style-type: none"> • Be suitable for elderly people (1): a traditional hot dessert/easy to eat/easy to digest • Be filling (1): Evidence of carbohydrate content (starch/ fibre) • Be a single portion (1): a single portion of a tray bake/ large dessert/weight of product/sketched against a hand/indication of portion size. • Be suitable to be reheated (1): evidence of product being able to be reheated in microwave oven/ traditional oven/ grill or hob. • Have a range of textures (1): evidence of one or more textures (soft/smooth/crispy/nutty/fruity). • Be fruit flavoured (1): evidence of fruit content using dried or fresh fruit. • Include one protein food (1): evidence of one protein food. • Include one ingredient high in fibre (1): wholemeal flour/ oats/ dried or fresh fruit/ carrot/ nuts/ seeds/ bran <p>Example of candidate response:</p>  <p>(8)</p>	

8 x 1

Question Number	Answer	Mark
12.	<p>Design idea 2</p> <p>Marks for design idea 2 can only be awarded where specification points are resolved differently than in design idea 1.</p> <p>Example of candidate response:</p>  <p>Design 2 Fruit Crumble.</p> <p>Crunchy crumble topping</p> <p>Crumble topping (contains butter-protein flour-carbohydrate filling.)</p> <p>Fruity texture with smooth sauce and chunky fruit</p> <p>Apple and raisin layers - high in fibre</p> <p>lined in foil container, suitable for reheating.</p> <p>Tray baked crumble - serves 1 Reheat in oven for 20 minutes. A popular dessert, served hot for elderly people.</p> <p style="text-align: right;">8 x 1</p>	(8)

Question Number	Answer	Mark
13.(d) (i)	<p>One point explained from the following:</p> <ul style="list-style-type: none"> • One fruit portion (1) because of the strawberries (1) • One fruit portion (1) because of the fruit juice (1) • Contributes two portions of fruit (1) to the five a day scheme (1) <p style="text-align: right;">2 x 1</p>	(2)

Question Number	Answer	Mark
13.(d) (ii)	<p>One point explained from the following:</p> <ul style="list-style-type: none"> • A variety of colours (1) because of the different layers (reference to custard/base/cream/curls) (1) • A decorative finish (1) because of the piping and chocolate curls (1) • Provide a contrast in colours (1) between layers/cream and chocolate (1) • Use of individual/ decorative container (1) because it appeals to single/elderly/for parents of young children. (1) • Use of clear container (1) which allows the consumer to see the contents. (1) <p style="text-align: right;">2 x 1</p>	(2)

Question Number	Answer	Mark
13.(e) QWC	<p>Evaluation to address the following issues:</p> <ul style="list-style-type: none"> • Method B uses standard components/ready made ingredients which saves time/labour/ensures consistent quality, Method A does not. • Method B is fully automated on a production line. This ensures 24/7 working, thus reducing labour costs and speeding up the production process. • Method B has a quality assurance system in place to manage and assess the quality of food products throughout the production process. • Method B ingredients have under gone initial unit operations (weighing/washing/juice extraction) to reduce number of processes in the production line. • Method B has a conveyor belt system that transports the food product around the production process, unlike the one off production of the trifle that would occur in a domestic kitchen. • Method B would use blast chilling to increase the shelf life of the product, through low temperature storage. Whilst Method A would be stored in a domestic fridge, the product is likely to take a much longer period of time to reach 0-4°C due to chilling process. • Method B would be able to be adapted quickly and easily to meet consumer demand, seasonal availability of ingredients and new product development. This is likely to increase the life cycle of the product. • Method B could be adapted to recreate new portion size products (family/ individual portion/ children packed lunch box) • Method A would be produced using one off production, which allows for intricate design, decoration and an individual product. This is likely to be more expensive to make owing to the handmade nature of the product. • Method B is likely to be cheaper to produce as manufacturers can purchase ingredients in bulk and save money. 	(6)
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1 - 2	Candidate identifies the area(s) of comparison with no development OR identifies and develops one area. Shows limited understanding of the comparison. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The student spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3 - 4	Candidate identifies some areas of comparison with associated development showing some understanding of the comparison. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The student uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5 - 6	Candidate identifies a range of areas of comparison with associated developments showing a detailed understanding of the comparison. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising information clearly and coherently. The student spells, punctuates and uses the rules of grammar with considerable accuracy.

Question Number	Answer	Mark
14.(a)(i)	<p>One point described from:</p> <ul style="list-style-type: none"> Product has reached the peak of its life cycle (1) and it needs to be redeveloped (1) Other similar products exist (1) which are in competition (1) Too expensive (1) compared to similar products (1) Advertising/packaging/labelling are out of date (1) and need redeveloping (1) Bad press/publicity (1) causes fall in sales (1) Portion size (1) is inappropriate for consumers (1) Consumer demand has altered (1) due to health/financial/special diets/ingredients/vegetarian alternatives (1) <p style="text-align: right;">2 x 1</p>	(2)

Question Number	Answer	Mark
14.(a)(ii)	<p>Outline one from the following:</p> <ul style="list-style-type: none"> Redesign the package (1) to make it more appealing (1) Have a store testing (1) to gauge consumers reaction (1) Produce the product in different sizes (1) to increase consumer demand (1) Develop a new product (1) to make healthier/luxury/vegetarian/economic/free of additives (1) Use BOGOF offers/special offers/loyalty points (1) to encourage new consumers/sales (1) Make changes to the recipe (1) and relaunch (1) New name (1) to enhance the image (1) New advertising campaign (1) using celebrity endorsement (1) <p style="text-align: right;">2 x 1</p>	(2)

Question Number	Answer	Mark
14.(b)	<p>One point explained from the following:</p> <ul style="list-style-type: none"> Bacteria are destroyed/killed (1) because of high temperatures during cooking (1) Bacteria cannot re-form (1) because of rapid/blast chilling to low temperatures (1) <p style="text-align: right;">1 x 2</p>	(2)

Question Number	Answer	Mark
14.(c)	<p>Three ways given from the following:</p> <ul style="list-style-type: none"> • Save energy (1) • Conserve/ not use new resources (1) • Reduce litter / waste (1) • Reduce landfill (1) • Reduce pollution/co₂ levels/ozone layer less affected (1) • Reduce risk to wildlife/ animals (1) • Less trees cut down/ destroyed (1) • Less transport pollution (1) <p style="text-align: right;">3 x 1</p>	(3)

Question Number	Answer	Mark
14.(d)	<p>Describe two from the following:</p> <ul style="list-style-type: none"> • Recycle packaging (1) to prevent pollution/ landfill/ waste/ enable new materials to be made (1) • Reuse the packaging (1) so that new packaging does not need to be made/ less trees cut down/ use sustainable resources (1) • Buy food loose (1) so that packaging is not required (1) • Bring your own bags/ baskets/ use biodegradable packaging/ plastic carrier bags (1) to transport food home (1) <p style="text-align: right;">2 x 2</p>	(2)

Question Number	Answer	Mark
14.(e) QWC	<p>Indicative content</p> <p>Discussion to address the following issues:</p> <ul style="list-style-type: none"> • Aesthetics: colour/ texture/ appearance • Organoleptic properties: smell/ aroma/ taste/ flavour • Setting: coagulation (eggs) • Thickening: gelatinisation (starch, sauces) • Binding (eggs, milk, cream) • Coating (bread crumbs, batters, sausage meat, pastry) • Bulking agent: flour, bran, bread, potatoes, rice, pasta, cous cous • Glazing: fat, milk, egg, syrup, icing. • Aeration: whisking, creaming, beating, rubbing in, mixing. • Caramelisation: flavour and colour of sugar and baked products. • Emulsification: mayonnaise, cakes, sauces. 	(6)
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1 - 2	Candidate identifies the issues with no development OR identifies and develops one area. Shows limited understanding of the issues. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The candidate spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3 - 4	Candidate identifies some issues with associated developments showing some understanding of the issues. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The candidate uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5 - 6	Candidate identifies a range of issues with associated developments showing a detailed understanding of the issues. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising information clearly and coherently. The candidate spells, punctuates and uses the rules of grammar with considerable accuracy.