

## **GCSE**

### **Design and Technology: Food Technology**

Unit **A525**: Sustainability and technical aspects of designing and making

General Certificate of Secondary Education

### **Mark Scheme for June 2014**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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## Annotations

Annotation	Meaning of annotation
	Blank Page – this annotation <b>must</b> be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.

1		1071	Caret	Caret sign to show omission
2		311	L1	Level 1
3		321	L2	Level 2
4		331	L3	Level 3
5		271	REP	Repeat
6		811	SEEN	Noted but no credit given
7		11	Tick	Tick

## Section A

Question		Answer	Marks	Guidance
1		C	1	Can be recycled
2		B	1	For energy
3		A	1	The producer gets a fair price for the product
4		C	1	Chicken
5		D	1	Biodegradable
6		<ul style="list-style-type: none"> <li>• Soil association</li> <li>• Organic</li> </ul>	1	1 mark
7		<ul style="list-style-type: none"> <li>• Diabetes / increase blood sugar level</li> <li>• Heart disease / CHD</li> <li>• High blood pressure</li> <li>• Obesity / high in calories</li> <li>• Overweight</li> <li>• Stored as fat if not used for energy</li> <li>• Tooth decay / dental caries / plaque</li> </ul>	1	1 mark Do not accept teeth rotting / going bad / dental problems
8		<ul style="list-style-type: none"> <li>• Casserole</li> <li>• Curry</li> <li>• Pie</li> <li>• Risotto</li> <li>• Sandwich</li> <li>• Salad</li> <li>• Soup</li> </ul>	1	1 mark Accept any named suitable dish
9		<ul style="list-style-type: none"> <li>• Biodegradable / decompose</li> <li>• Reduces waste</li> <li>• Free fertilizer / nutrients back to the land</li> <li>• Greenhouse gases reduced / avoided</li> <li>• Improves soil quality / good for soil</li> <li>• Provides natural fertilizer / less chemical run-off into rivers</li> <li>• Recycling</li> <li>• Reusing</li> <li>• Reference to cost</li> </ul>	1	1 mark Accept any reference to cost Question is why are 'we being encouraged' not 'how' e.g. free compost bins  Do not accept eco friendly / helps the environment - too vague

Question		Answer	Marks	Guidance
10		<ul style="list-style-type: none"> <li>• High blood pressure</li> <li>• Strokes</li> <li>• Heart disease /CHD</li> <li>• Kidney disease / kidney stones / bad for kidneys</li> <li>• Osteoporosis / speeds up loss of Calcium</li> <li>• Can cause an increased risk of stomach cancer</li> <li>• Water retention</li> </ul>	1	1 mark Do not accept heart attacks / heart problems
11		False	1	1 mark
12		True	1	1 mark
13		False	1	1 mark
14		False	1	1 mark
15		True	1	1 mark

## Section B

Question		Answer	Marks	Guidance
16	(a)	<ul style="list-style-type: none"> <li>• Microwave</li> <li>• Pressure cooker</li> </ul>	2	2x 1 mark Only accept these answers
16	(b)	<ul style="list-style-type: none"> <li>• <b>Different foods can be cooked in different tiers</b> - gives a relevant example e.g. potatoes in bottom vegetables / fish on top</li> <li>• <b>Foods requiring different cooking times can be added to additional tiers</b> – not using another pan</li> <li>• <b>Only one ring is used instead of 2 or 3</b> - several foods can be cooked at once</li> </ul>	2	2x1 mark Accept either two separate points or one well explained answer. Do not accept because it saves energy as this is part of the question  E.g. of 2 mark answer Cook various foods at once e.g. vegetables and fish
16	(c)	<ul style="list-style-type: none"> <li>• Affects the cost of the food product / profit margins</li> <li>• Consumers want environmentally friendly products / increases sales figures</li> <li>• Energy is expensive / to reduce their costs</li> <li>• Lower CO2 emissions / global warming / damage ozone layer / pollution / greenhouse gases</li> <li>• Eco / carbon footprint</li> <li>• Sustainable sources of energy/ some are running out ref to oil / coal</li> </ul>	2	2x1 mark Do not accept 'good for the environment / helps the environment' Candidates must refer to reducing / lowering

Question		Answer	Marks	Guidance								
16	(d)	<table border="1"> <thead> <tr> <th>Remove</th> <th>Add</th> </tr> </thead> <tbody> <tr> <td>Butter</td> <td>Any vegetable oil Egg Mayonnaise Pesto Soya milk / cream / yogurt Soya spread Tomato Ketchup Vegetable / dairy free margarine Vegetable spread / dairy free / non dairy</td> </tr> <tr> <td>Milk</td> <td>Change to tomato based sauce Dairy free milk Lactose free / intolerant milk Oat / rice/ almond /coconut milk Soya milk / cream Stock Water</td> </tr> <tr> <td>Cheese</td> <td>Egg Herbs / Spices Horseradish sauce Lactose free cheese / Lactofree cheese / Cheezly Mustard Tomato Tofu Vegan cheese / Soy cheese Named vegetables</td> </tr> </tbody> </table>	Remove	Add	Butter	Any vegetable oil Egg Mayonnaise Pesto Soya milk / cream / yogurt Soya spread Tomato Ketchup Vegetable / dairy free margarine Vegetable spread / dairy free / non dairy	Milk	Change to tomato based sauce Dairy free milk Lactose free / intolerant milk Oat / rice/ almond /coconut milk Soya milk / cream Stock Water	Cheese	Egg Herbs / Spices Horseradish sauce Lactose free cheese / Lactofree cheese / Cheezly Mustard Tomato Tofu Vegan cheese / Soy cheese Named vegetables	4	<p>4 x 1 mark</p> <p><b>Do not accept the same point in both boxes</b></p> <p><b>Do not accept margarine on its own</b></p> <p><b>Accept any enriched / lubricating ingredient e.g. mayonnaise</b></p> <p><b>Do not accept goats milk</b></p>
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Question		Answer	Marks	Guidance
16	(e)	<ul style="list-style-type: none"> <li>• Biodegradable</li> <li>• Can be cooked / served / eaten from the container</li> <li>• Can be made from recycled materials</li> <li>• Can be made from sustainable materials</li> <li>• Can withstand high temperatures</li> <li>• Cool to touch when taken out of the oven or microwave</li> <li>• Different colours available</li> <li>• Different shapes available</li> <li>• Easy to print on</li> <li>• Freezable</li> <li>• From freezer to oven</li> <li>• Lightweight</li> <li>• Microwavable</li> <li>• No washing up required.</li> <li>• Recyclable</li> <li>• Strong board design that will not collapse during cooking</li> </ul>	2	2x1 mark Do not accept packaging Do not accept easier to cook
16	(f)	<ul style="list-style-type: none"> <li>• Higher animal welfare standards / food standards</li> <li>• Quicker delivery</li> <li>• Reduce carbon footprint / eco footprint</li> <li>• Reduce food miles</li> <li>• To reduce the cost of transporting food</li> <li>• To support local farmers / UK economy</li> <li>• Traceability</li> <li>• Use as publicity / promotional</li> </ul>	2	2 x1 mark  Do not accept ingredients are cheaper / reference to cost on its own Do not accept just 'local ingredients'

Question		Answer	Marks	Guidance	
				Content	Levels of response
16	(g)	<ul style="list-style-type: none"> <li>• <b>Aim for 3 balanced meals a day</b> – avoid snacking and grazing</li> <li>• <b>Checking food labels</b> – amounts of calories / fats / sugars / look for hidden sugars / GDA / traffic light labels</li> <li>• <b>Choosing healthy options products</b> – gives examples of products</li> <li>• <b>Consider methods of cooking</b> - grill,</li> </ul>	6	If candidates list in bullet form – maximum 2 marks Do not accept reference to exercise  If awarding 0 marks you must put SEEN next to the response instead of a level	<b>Level 3 (5-6 marks)</b> Thorough explanation, showing a clear understanding of how consumers can rethink their diet. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate

Question			Answer	Marks	Guidance	
					Content	Levels of response
			steam, boiling instead <ul style="list-style-type: none"> <li>• <b>Controlling calorie intake</b> – looking at labels</li> <li>• <b>Eatwell Plate</b> – reference to good meal planning / quality of life / balanced diet</li> <li>• <b>Energy balance</b></li> <li>• <b>Follow the guidelines for healthy eating</b> – base meals on starchy foods / eat lots of fruit and vegetables / 5 a day / eat more fish / cut down on saturated fat and sugar / drink plenty of water</li> <li>• <b>Importance of breakfast</b> -</li> <li>• <b>Increase intake of slow release carbohydrates / low GI foods</b> – to regulate blood sugar levels &amp; hunger</li> <li>• <b>Measuring portions / Weighing before cooking / portion control / smaller portions</b></li> <li>• <b>Planning menus</b></li> <li>• <b>Reduce the amount of high fat foods eaten</b> –</li> <li>• <b>Reduce the intake of ready meals / fast foods / take-away / snacks</b> – tend to be high in fat, and in some cases sugar / make own - can control content</li> <li>• <b>Supermarket offers</b> – are often products high in fat and sugar</li> </ul>			<p>can demonstrate the accurate use of spelling, punctuation and grammar</p> <p><b>Level 2 (3-4 marks)</b> Adequate explanation, showing an understanding of how consumers can rethink their diet. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation</p> <p><b>Level 1 (1-2 marks)</b> Basic explanation, if candidates only write in point form a maximum of 2 marks should be awarded, showing some understanding of how consumers can rethink their diet. There will be little or no use of specialist terms. Answers may be ambiguous or disorganized. Errors of grammar, punctuation and spelling</p> <p><b>0=no response worthy of credit</b></p>

Question		Answer	Marks	Guidance
17	(a)	<ul style="list-style-type: none"> <li>• <b>Grater</b> – grate cheese / vegetables / fruit / remove rind make breadcrumbs / slice cheese / slice vegetables</li> <li>• <b>Measuring jug</b> – measure liquid / beat eggs and milk together</li> </ul>	4	4x1 mark Measuring jug accept reference to any liquid Grater must state a food that can be grated / sliced
17	(b)	<ul style="list-style-type: none"> <li>• <b>Adapting the recipe</b> - so it is suitable for large scale production</li> <li>• <b>Allows testing on product with target group / consumers</b> - to identify areas of improvement</li> <li>• <b>Appearance</b> - to ensure it appeals to the target market</li> <li>• <b>Check meets specification</b> - linked to being able to successfully sell the product / reference to size / colour / shape / texture / cost</li> <li>• <b>Check the recipe works before production</b> - so ingredients are not wasted</li> <li>• <b>Checking stability in transport</b> - it remains in a round / does not collapse</li> <li>• <b>Checking suitability for storage</b> - whether it can be stored in the fridge / freezer successfully / how long it can be stored for / use by dates</li> <li>• <b>Experimenting</b> – to develop the range – may give example e.g. low fat</li> <li>• <b>Flavour</b> - developing other flavours / developing it into a range</li> <li>• <b>Nutritional analysis – to meet nutritional claims</b></li> </ul>	2	2x1 mark Accept either two separate points or one well explained answer
17	(c)	<p><b>Attractive</b></p> <ul style="list-style-type: none"> <li>• Adding ingredients to the filling to colour – e.g. coulis, marbling the mixture</li> <li>• Decorate with any named fruit / citrus zest / mint leaves / edible flowers</li> <li>• Grated chocolate / drizzled chocolate/ chocolate curls / shapes</li> <li>• Piped cream</li> <li>• Sprinkles / nuts / crushed biscuits / any named sweet standard component</li> </ul>	4	4x1 mark  Candidates must use the words <b>attractive</b> and <b>crisp base</b> in the first column.  Do not accept garnish or decorate without it being clarified

Question			Answer	Marks	Guidance
			<p><b>Crisp base</b></p> <ul style="list-style-type: none"> <li>• Add additional crunchy food e.g. Nuts / cornflakes / honeycomb</li> <li>• Adjust the amount of honey</li> <li>• Cooking the base / for longer</li> <li>• Use crunchier biscuits e.g. gingernut biscuits / hobnobs</li> <li>• Use pastry case</li> </ul>		
17	(d)		<ul style="list-style-type: none"> <li>• Changes can be made easily to the recipe / product</li> <li>• Can produce different sized batches / made to order</li> <li>• If a mistake is made it only affects one batch</li> <li>• Ingredients costs are less as bought in bulk</li> <li>• Only small number of people involved / less on wages</li> <li>• Product is consistent / same size</li> <li>• Production costs are lower than job / craft / one off production</li> <li>• Quicker rate of production than one off / craft production</li> </ul>	3	3x1 mark Quicker must be qualified
17	(e)	i	<ul style="list-style-type: none"> <li>• 0 - 8°C</li> </ul>	1	1x1 mark Accept any single figure between 0 - 8°C
17	(e)	ii	<ul style="list-style-type: none"> <li>• Contains cheese</li> <li>• Contains high risk foods / ingredients / perishable ingredients</li> <li>• Contains protein /moisture</li> <li>• Stop product going sour / curdling</li> <li>• To extend shelf life / preserve for longer</li> <li>• To maintain shape / texture / remains stable</li> <li>• To slow down bacterial growth</li> </ul>	1	1 x 1 mark Do not accept reference to bacteria not growing Do not accept reference to 'going off'
18	(a)		<ul style="list-style-type: none"> <li>• Yeast</li> <li>• Bicarbonate of soda / Baking soda</li> <li>• Sour dough starter</li> </ul>	1	1x1 mark Accept sour dough on its own

Question		Answer	Marks	Guidance
18	(b)	<ul style="list-style-type: none"> <li>• <b>Allows the bread to rise</b> when the yeast produces the Co<sub>2</sub></li> <li>• <b>Gluten stretches when kneaded</b> - provides the structure for the bread.</li> <li>• <b>Higher protein content</b> - gluten</li> <li>• <b>Improved elasticity</b> – so dough rises without collapsing / holds its shape</li> <li>• <b>Texture</b> – gluten helps provide the open texture</li> </ul>	2	2x1 mark Accept either one well reasoned answer or two separate points which show understanding  <b>Do not accept help to rise</b>
18	(c)	i	1	1x1 mark
18	(c)	ii	1	1x1 mark
18	(d)	<ul style="list-style-type: none"> <li>• Can help to control weight – high fibre foods are filling</li> <li>• Aids / healthy / helps digestive system</li> <li>• Helps to control blood sugar levels</li> <li>• Helps to push other foods through the digestive system / cleans the walls of the intestine</li> <li>• Holds water and keeps faeces soft and bulky</li> <li>• Linked to lowering blood cholesterol / heart disease / CHD</li> <li>• Prevents bowel cancer</li> <li>• Prevents constipation / helps bowel movement / excretion of faeces</li> <li>• Prevents diverticular disease</li> <li>• Prevents haemorrhoids (piles)</li> </ul>	2	2x1 mark Do not accept helps digestion must refer to digestive system  Do not accept getting rid of waste products
18	(e)	<b>Hand held</b> <ul style="list-style-type: none"> <li>• Explanation of why it can be hand held / measurements</li> <li>• Ingredients not going to fall apart</li> <li>• Reference to shape e.g. bread rolls, baps, bread cakes, bread bun</li> <li>• Reference to size</li> </ul>	6	6x1 mark If not designed a bread product - no marks 4 marks available providing you can clearly see the specification points have been met 2 marks for different textures included 1 additional mark for quality of annotation Do not accept unjustified 'hand held' as this is copied from the question

Question		Answer	Marks	Guidance
		<p><b>High in fibre</b></p> <ul style="list-style-type: none"> <li>• Addition of nuts / seeds</li> <li>• Fruit or vegetable included - named</li> <li>• Use of wholemeal / granary flour</li> </ul> <p><b>Attractive</b></p> <ul style="list-style-type: none"> <li>• Decoration / garnish</li> <li>• Glazed</li> <li>• Reference to colour</li> <li>• Reference to shape - different to standard roll / bread bun</li> </ul> <p><b>Contains different textures</b></p> <ul style="list-style-type: none"> <li>• Identifies ingredients which give different named textures</li> </ul>		<p>Drawing / notes clearly identifies an ingredient and states fibre</p> <p>1 mark for naming an ingredient that provides texture e.g. seeds on top for texture 2 marks for describing 2 different named textures e.g. crunchy seeds on top and juicy raisins Do not accept reference to bread being soft / hard bread unless they have done something to it, e.g. glaze makes a hard crust</p>
18	(f)	<ul style="list-style-type: none"> <li>• Accurate proving / cooking time</li> <li>• Bacterial check</li> <li>• Correct colour /colour sensor</li> <li>• Correct consistency of the bread dough</li> <li>• Correct cooking temperature</li> <li>• Correct hygiene of work area / staff</li> <li>• Correct storage of ingredients / temperature control</li> <li>• Correct weight of ingredients / product</li> <li>• Correctly cooked / properly cooked</li> <li>• Has proved to correct size / risen enough</li> <li>• No foreign bodies / use of metal detector</li> <li>• Products are identical / all look the same</li> <li>• Quality of ingredients on arrival / ingredients in date</li> <li>• Same shape / size</li> <li>• Sampling product / tasting of sensory qualities / texture / mouth feel</li> <li>• Time and speed of mixing ingredients</li> </ul>	2	2x1 mark

Question		Answer	Marks	Guidance
19	(a)	<ul style="list-style-type: none"> <li>• Bleach in low cupboard</li> <li>• Cupboard door open</li> <li>• Food on floor / banana / toast</li> <li>• Handle of mug with hot drink at edge of worktop</li> <li>• Iron</li> <li>• Knife handle sticking out</li> <li>• Medicines</li> <li>• Pan handle sticking out / hob unattended</li> <li>• Sockets overloaded</li> <li>• Trailing flexes</li> <li>• Unsupervised child / child on own</li> <li>• Water on floor</li> </ul>	4	4 x 1 mark If hazards are ringed in picture no marks given as question is 'state'

Question		Answer	Marks	Guidance	
				Content	Levels of response
19	(b)	<p><b>Buying:</b></p> <ul style="list-style-type: none"> <li>• Buy chilled and frozen foods last</li> <li>• Buy food in season – cheapest &amp; best quality</li> <li>• Buy suitable quantities to avoid waste</li> <li>• Check labels for nutritional content to provide a balanced diet</li> <li>• Check labels / ingredients list for those with allergies</li> <li>• Check packaging is not damaged / tamper evident seals not broken</li> <li>• Don't be tempted by deals unless the food can be used / frozen</li> <li>• Food should look fresh / within date mark / use by date / best before</li> <li>• Look for assistants who handle foods hygienically display food hygiene</li> </ul>	6	<p>If candidates list in bullet form – maximum 2 marks Read carefully - some are simply making lots of statements without any explanations Candidates must refer to buying and storing to get full marks. Maximum four marks if they only refer to one area.</p> <p><b>Do not accept reference to sell by date or reference to sustainable design e.g. Fairtrade</b></p> <p>If awarding 0 marks you must put SEEN next to the response instead of a level</p>	<p><b>Level 3 (5-6 marks)</b> Thorough explanation, showing a clear understanding of the advice given to consumers on buying, and storing food. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.</p> <p><b>Level 2 (3-4 marks)</b> Adequate explanation, showing an understanding of the advice given to consumers on buying and storing food. There will be some use of specialist terms, although these may</p>

Question			Answer	Marks	Guidance	
					Content	Levels of response
			certificates / show staff training <ul style="list-style-type: none"> <li>• Look for clean shops / reputable shops</li> <li>• Make a shopping list</li> <li>• Take shopping straight home if perishable / frozen</li> </ul> <b>Storing:</b> <ul style="list-style-type: none"> <li>• Check dates on foods</li> <li>• Check packaging is not damaged / tamper evident seals not broken</li> <li>• Check temperatures of fridges / freezers / examples of correct storage temperatures</li> <li>• Do not overload refrigerator/allow air to circulate</li> <li>• Follow storage instructions on the packet</li> <li>• Keep dried foods in storage containers to prevent them getting damp / flies / weevils getting in to products</li> <li>• Keep foods wrapped and protected from flies etc</li> <li>• Prevent cross contamination - put raw meat at the bottom of the refrigerator</li> <li>• Put chilled/frozen foods away immediately</li> <li>• Rotate stock and use in date order</li> </ul>			not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation  <b>Level 1 (1-2 marks)</b> Basic explanation, if candidates only write in point form a maximum of 2 marks should be awarded, showing some understanding of the advice given to consumers on buying and storing food. There will be little or no use of specialist terms. Answers may be ambiguous or disorganized. Errors of grammar, punctuation and spelling  <b>0=no response worthy of credit</b>

Question		Answer	Marks	Guidance
19	(c)	<ul style="list-style-type: none"> <li>• Bacillus cereus</li> <li>• Campylobacter</li> <li>• Clostridium (botulinum)</li> <li>• Clostridium (perfringens)</li> <li>• E.coli</li> <li>• Listeria</li> <li>• Salmonella</li> <li>• Staphylococcus (aureus)</li> </ul>	2	2 x 1 mark
19	(d)	<ul style="list-style-type: none"> <li>• Diarrhoea</li> <li>• Dehydration</li> <li>• Headache</li> <li>• High / low temperature</li> <li>• Sickness / vomiting</li> <li>• Stomach ache / cramps / nausea / feel sick</li> </ul>	1	1x1 mark Do not accept 'throwing up' unless qualified
19	(e)	<ul style="list-style-type: none"> <li>• Food / nutrients</li> <li>• Moisture / damp</li> <li>• Oxygen / air</li> <li>• Time</li> <li>• Warmth</li> </ul>	2	2x1mark  Do not accept heat or temperature or room temperature

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