

Mark Scheme (Results)

Summer 2012

GCSE Design and Technology
Food Technology (5FT02)

Paper 01 Knowledge and
Understanding of Food Technology

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Summer 2012

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Question Number	Answer	Mark
1	D	(1)
Question Number	Answer	Mark
2	C	(1)
Question Number	Answer	Mark
3	B	(1)
Question Number	Answer	Mark
4	A	(1)
Question Number	Answer	Mark
5	C	(1)
Question Number	Answer	Mark
6	A	(1)
Question Number	Answer	Mark
7	A	(1)
Question Number	Answer	Mark
8	C	(1)
Question Number	Answer	Mark
9	D	(1)
Question Number	Answer	Mark
10	B	(1)

Question Number	Answer	Mark										
11 (a)	<table border="1"> <thead> <tr> <th data-bbox="419 264 820 300">Name</th> <th data-bbox="820 264 1246 300">Use</th> </tr> </thead> <tbody> <tr> <td data-bbox="419 300 820 412">Peeler</td> <td data-bbox="820 300 1246 412">to remove skin/ peel/ reduce size of food (1)</td> </tr> <tr> <td data-bbox="419 412 820 696">Palette knife</td> <td data-bbox="820 412 1246 696">to spread icing/lift/remove a cake from a tin/fold/cut/slice Do not accept: Flatten/unstick/scrape (1)</td> </tr> <tr> <td data-bbox="419 696 820 909">Pattie tin/tart or bun tin/Yorkshire pudding tin (1)</td> <td data-bbox="820 696 1246 909">To bake small cakes/Yorkshire pudding/muffins/ pastry/tarts/pies Do not accept baking tray.</td> </tr> <tr> <td data-bbox="419 909 820 1126">Pastry/oil/egg glazing brush (1)</td> <td data-bbox="820 909 1246 1126">To grease baking tins, glaze/brush pastry with egg/milk/sugared water</td> </tr> </tbody> </table>	Name	Use	Peeler	to remove skin/ peel/ reduce size of food (1)	Palette knife	to spread icing/lift/remove a cake from a tin/fold/cut/slice Do not accept: Flatten/unstick/scrape (1)	Pattie tin/tart or bun tin/Yorkshire pudding tin (1)	To bake small cakes/Yorkshire pudding/muffins/ pastry/tarts/pies Do not accept baking tray.	Pastry/oil/egg glazing brush (1)	To grease baking tins, glaze/brush pastry with egg/milk/sugared water	(4 x 1)
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Pastry/oil/egg glazing brush (1)	To grease baking tins, glaze/brush pastry with egg/milk/sugared water											
11(b) (i)	<p>Two from:</p> <ul style="list-style-type: none"> • Fat (1) • Vitamin A (1) • Vitamin D (1) • Vitamin E (1) • Vitamin K (1) • Vitamin B2(1) • Iron(1) • Sulphur (1) 	(2 x 1)										
11(b) (ii)	<p>Two ways from:</p> <ul style="list-style-type: none"> • Store eggs in boxes or packing trays (1) • Blunt end upwards (1) • Store away from strong smelling foods due to porous shells (1) • Store away from meat and fish to avoid cross contamination (1) • Wash hands after handling eggs(1) • Practise stock rotation (1) • Do not use cracked eggs/carried carefully (1) • Do not wash eggs as this will remove the protective coating. (1) 											

	<ul style="list-style-type: none"> • Use within 21 days of laying. (1) • Use within date mark. (1) • Store in fridge/cool/concealed area (1) • Store in a dry area (1) • Out of sunlight (1) • 	(2 x 1)
11(b)(iii)	<p>Three functional uses from:</p> <ul style="list-style-type: none"> • Whisking/aeration/holding/trapping air/foam/fold (1) • Coagulation/setting/sticks together (1) • Colour (1) • Texture (1) • Flavour (1) • Garnishing/decorating (1) • Binding/combine (1) • Add nutritional value to a meal (1) • Coating (1) • Emulsifying (1) • Glazing (1) • Enrich(1) • Thicken (1) • Raising agent (1) 	(3 x 1)
11(b)(iv)	<p>Any two from:</p> <ul style="list-style-type: none"> • When eggs are heated the proteins coagulate. • The white changes from transparent to white/opaque colour • The egg changes from a runny texture to hard/set/stiffen/solid texture • The egg white coagulates at 60°C/first • The egg yolk coagulates at 68°C/70°C/second • The whole egg coagulates at 64°C • The heated egg protein can thicken a mixture • As the temperature increases the protein hardens/toughens • The temperature increases the protein shrinks. 	(2 x 1)
11(c)	<p>Any one from:</p> <ul style="list-style-type: none"> • Baking blind means that the pastry case is baked empty of any filling (1), this is to allow the pastry case to develop its characteristic short/crumbly/hard texture/hold its shape/prevent pastry rising (1) • Baking blind allows the dextrinisation of 	

	<p>starch/protein in dry heat (1) to create a desirable short/golden brown/crumblly texture/flavour/taste to the pastry (1)</p> <ul style="list-style-type: none"> • Baking blind prevents the pastry from going soft/soggy (1) by baking the empty pastry case prior to putting the filling inside/thickness of pastry (1) • A pastry case may be baked blind to increase the shelf life/versatility of the product (1) to be used as a standard component in a domestic or commercial kitchen (1) • Decreases cooking time of final product (1) because the pastry case has already been cooked (1) 	(2 x 1)
	Total	(15)

Question Number	Answer	Mark
11(d)	<p>Two modifications from:</p> <ul style="list-style-type: none"> • Change the plain flour to wholemeal flour (1) to increase the fibre content (1). This maybe done by using 50:50 wholemeal: plain flour/100% wholemeal flour. Fibre helps to decrease appetite/gives a feeling of fullness (1). • Increase the vegetable content of the quiche (1) because vegetables have high soluble and insoluble fibre content/this contributes to a healthy low fat diet (1). • Change the savoury egg custard (1) to a tomato based sauce which would decrease the saturated fat content found in the eggs and milk (1). • Reduce/remove the cheese (1), which is high in saturated fat and use an alternative low fat cheese or flavouring substitute mustard/ herbs/ strongly flavoured vegetables (1). • Use semi skimmed/ skimmed/Soya/goats milk (1) as this has a lower fat content than whole milk (1). • Use a chilled plant based PUFA margarine (flora) (1) instead of animal fat (butter/lard), which is high in saturated fat (1). • Reduce butter/lard/cheese/full fat milk (1) to reduce fat/salt content (1). <p><i>[Do not accept: low fat butter]</i></p>	(2 x 2)

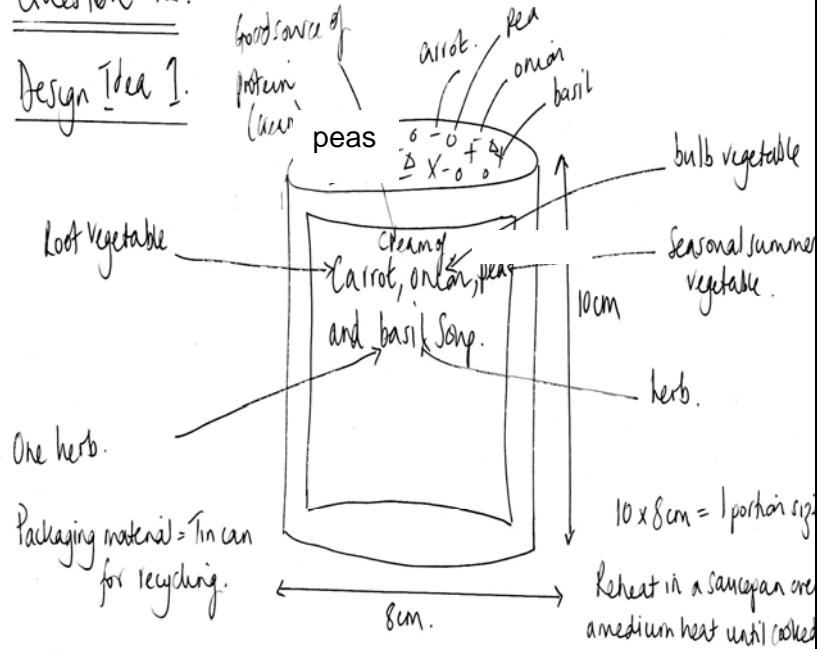
Question Number	Answer	Mark
12	<p>Design idea 1</p> <p>1 Mark should be awarded for evidence of each point of the specification resolved in the design.</p> <p>When an answer does not viably answer a specification point 0 marks.</p> <p>For each specification point with the element viably satisfied, 1 mark.</p> <p>Candidates should answer any specification point in graphical form and by annotation.</p> <ul style="list-style-type: none"> • Include one root vegetable(1): carrot /beetroot /parsnip /swede /radish • Include one bulb vegetable (1): garlic/red onion/white onion/ shallot/leeks • Include one different seasonal summer vegetable (1): tomato/lettuce/ spinach/ beans/ peas/ sweet corn/ peppers/ watercress/ potatoes/ courgette/ marrow. • Include one good source of protein (1): cheese, chicken, fish or beef stock/ peas/ yogurt/ Soya/ Quorn, lentils and beans. • Include one herb (1): parsley/rosemary/sage/ chives/ basil/ coriander/ mixed herbs/ oregano/ marjoram/Thyme. • Be one portion (1): indication of portion size/ weight/measurement of product/ sketched against hand. • Be sold in a container that has environmentally friendly packaging (1): comments regarding appropriate named materials (cardboard/ paperboard/metal polystyrene/ glass) to be recycled/ reused/ reduced /renewed/respect for the environment. • Be able to be reheated easily (1): microwavable/ heating instructions in packaging container/ reheated in saucepan/ previously cooked/size of vegetables reduce cooking time/ mention about transference of heat (conduction or convection) <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>	

Example of candidate response:

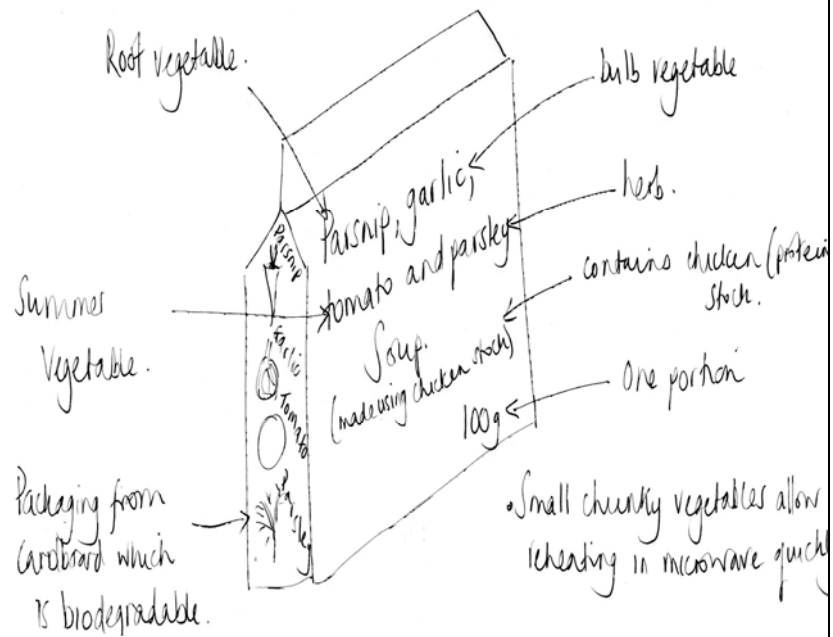
2012.

Question 12.

Design Idea 1.



Design Idea 2.



Question Number	Answer	Mark
13a	<p>Three techniques from:</p> <p>Separation processes:</p> <ul style="list-style-type: none"> • wet cleaning(1) • dry cleaning (1) • washing (1) • spraying (1) • sorting (1) • Peeling(1) • grading of vegetables (1) <p>Size reduction:</p> <ul style="list-style-type: none"> • Chopping (1) • Cutting (1) • Slicing (1) • Dicing (1) • Shredding (1) • grating vegetables (1) • grating cheese (1) <p>Mixing /combining:</p> <ul style="list-style-type: none"> • ingredients/components(1) • Blending (1) <p>Blanching:</p> <ul style="list-style-type: none"> • vegetables (1) <p>Weighing and Measuring:</p> <ul style="list-style-type: none"> • Weighing (1) • Measuring (1) <p><i>Do not accept: cooking</i></p> <p><i>[Accept any combination of the above answers.]</i></p>	(1 x 3)

<p>13b</p>	<p>Any one described from:</p> <ul style="list-style-type: none"> • Weighing/measuring (1) to check tolerances (1) • Storage of foods in silos and vats (1) to separate raw dry and wet ingredients (1). • Ingredients are pumped through pipes (1) to food preparation areas (1) • Mixing and combining methods (1) used to make any named food components (1). • Movement of ingredients (1) around the site by conveyor belt systems (1). • Dispensing ingredients using injectors and depositors (1) to dispense the correct amount of each component into the container (1). • Shaping and forming using extrusion techniques (1) for the pasta shapes, to create same sized pasta shapes for even cooking / quality control (1). • Cooking of the food components (1) prior to assembly using industrial vats (1). • Packaging of pasta bake(1) to increase shelf life/protect/preserve product (1) • Temperature control using blast freezers and chillers (1) to preserve food and increase storage life (1). • Transportation of final product (1) using temperature controlled transportation system to final destination (shop) (1). • Any reference to high volume/batch/mass/CAM production processes (1) to speed up/ simple recipe/ensure consistency/meet consumer demand on the process of production (1) 	<p>(2 x 1)</p>
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<p>13c</p>	<p>One description from:</p> <ul style="list-style-type: none"> • Micro-organisms/bacteria are destroyed/ killed (1) because of high temperatures/72°C or above during cooking (1). • Micro-organisms /bacteria cannot reform/grow/multiply (1) because of rapid/blast chilling to low temperatures/4°C or below (1). <p><i>[Do not accept: reference to basic cook/chill response as this is the question.]</i></p>	<p>(1 x 2)</p>
<p>13d</p>	<p>Two ways from:</p> <ul style="list-style-type: none"> • Made using: <ul style="list-style-type: none"> ○ Seasonal ingredients (1) ○ local ingredients (1) ○ consideration of food miles (1) ○ fair trade ingredients (1) ○ organic (1) ○ free-range (1) • Reduce food waste by making portion size of processed foods more realistic/prototype.(1) • Choice of packaging materials: <ul style="list-style-type: none"> ○ recycling (1) ○ reducing (1) ○ reusing (1) ○ any appropriate reference to the 7 R's • Using leftover ingredients from the pasta bake for other products. (1) • Reduce the effects on health by using balanced, healthy recipes.(1) • Reduce the carbon footprint during the growing, processing and distribution of our food. (1) • Reduce water consumption: <ul style="list-style-type: none"> ○ during preparation (1) ○ processing (1) • Reduce: <ul style="list-style-type: none"> ○ energy inefficiency (1) ○ fuel (1) ○ carbon footprint (1) ○ transportation of ingredients (1) 	<p>(2 x 1)</p>

13e (i)	<p>One explanation from:</p> <ul style="list-style-type: none"> • Pasta bake is nutritious/ healthy (1) because it contains a good source of carbohydrate/protein/vitamins/minerals/part of the five-a-day (1). • Fibre in veg/carbohydrate in pasta (1) will make meal filling/satisfying by providing satiety (1). • From the picture, the Pasta bake is a good size portion (1) which is a suitable weight/portion for a healthy/balanced/nutritious diet (1). • Pasta bake product is a complete/filling meal (1) because it contains a good balance/variety of nutrients/sensory qualities in the correct proportion to each other (1). 	(1 x 2)
(ii)	<p>One explanation from:</p> <ul style="list-style-type: none"> • A reference to groups of people (1) will enjoy the meal/popular product (1). • A reference to groups of people (1) because it does not have a strong flavour/ reference to sensory properties/easy to eat/chew/traditional/ easy to reheat/no nuts (1). • Inexpensive/ economical/cheap/affordable/healthy (1) because of the good carbohydrate content/no luxury ingredients/no expensive ingredients (1). • A convenience food/ ready prepared food (1) that is quick to reheat/ prepare (1). 	(1 x 2)

Question Number	Answer	Mark				
13f QWC	Evaluation to address the following issues:					
	<table border="1"> <tr> <th data-bbox="387 1664 751 1693">A</th> <th data-bbox="759 1664 1302 1693">B</th> </tr> <tr> <td data-bbox="387 1693 751 1827">Recipe A does not.</td> <td data-bbox="759 1693 1302 1827">Standard components / ready made ingredients which saves time / labour / ensures consistent quality.</td> </tr> </table>		A	B	Recipe A does not.	Standard components / ready made ingredients which saves time / labour / ensures consistent quality.
	A		B			
	Recipe A does not.		Standard components / ready made ingredients which saves time / labour / ensures consistent quality.			
<table border="1"> <tr> <th data-bbox="387 1872 751 1901">A</th> <th data-bbox="759 1872 1302 1901">B</th> </tr> <tr> <td data-bbox="387 1901 751 2024">Liquid milk is used; this improves sensory</td> <td data-bbox="759 1901 1302 2024">Dried skimmed milk powder is used to aid preparation and processing.</td> </tr> </table>	A	B	Liquid milk is used; this improves sensory	Dried skimmed milk powder is used to aid preparation and processing.		
A	B					
Liquid milk is used; this improves sensory	Dried skimmed milk powder is used to aid preparation and processing.					

	properties / flavour/colour/ appearance.		
A	B		
Milk	Whipping cream is used to enhance the flavour and texture lost by using skimmed milk powder.		
A	B		
Butter is used to enrich the sauce.	Oil is used as this is likely to be cheaper than butter.		
A	B		
50g cheddar cheese	25g cheddar cheese. Cheese is an expensive ingredient.		
A	B		
Additional cheese	Mustard powder will restore flavours. Is cheaper to use than the additional cheese.		
A	B		
Additive free.	B contains colours, which are additives; this assists with the quality of the product.		
A	B		
More ham and peas.	Less ham and peas. This is because they are expensive ingredients.		
A	B		
Use the same quantities of pasta. This is a staple food product /starchy carbohydrate/filling food.	Use the same quantities of pasta. This is a staple food product /starchy carbohydrate / filling food.		
A	B		
Manufacturers are trying to reduce the additives that they use in products due to consumer demand	Additional salt and fat are added to the recipe to extend the shelf life of the product.		

	and safety.		
	A	B	
	Expensive	Likely to be cheaper as cost per unit is cheaper than buying fresh/less wastage.	
	A	B	
	One off production.	easier to produce, as automated processes are used	

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
14a	Only answer: <ul style="list-style-type: none"> • HACCP 	(1)
14b	One explanation from: <ul style="list-style-type: none"> • Food that is susceptible to food poisoning/pathogenic bacteria/infective bacteria (1) due to the favourable conditions/high moisture/high protein content that will support the growth of these bacteria (1) • Perishable foods/short shelf life (1) this could make them unsafe to eat beyond the use by date/date mark (1). • Any named high risk food (1) and reference to supporting bacterial growth (1). 	(1 x 2)
14c	One description from: <ul style="list-style-type: none"> • Poor food hygiene (1) because incorrect handling/cooking/storage of foods (1). • Poor personal hygiene (1) because food handlers are not trained correctly (1). • Cross contamination (1) between food and food/ handlers/pests/pets/ rodents (1). • More food prepared / consumed outside of the home (ready meals, take away food, restaurants, cafes etc) (1) therefore resulting in potential cross contamination of food/inaccurate preparation/cooking/storage (1). • Lack of training for food handlers (1) because staff are temporary workers/Saturday jobs/low paid/lacking skills (1). • Failure to follow storage/ reheating /cooking instructions correctly (1), leading to contamination by food poisoning/pathogenic bacteria (1). • Confusion (1) about food labelling /the date mark system (1). 	(1 x 2)
14d	One offence from: <ul style="list-style-type: none"> • to ensure you do not include anything in food/ remove anything from food/ treat food (any specific technical reference to personal/food hygiene) in any way which means it would be damaging to the health of people eating it (1) 	

	<ul style="list-style-type: none"> • to ensure that the food you serve / sell is of the nature / substance / quality which consumers would expect (1) • to ensure that the food is labelled / advertised / presented in a way that is not false / misleading (1) 	(1 x 1)
14e	<p>Two ways from:</p> <ul style="list-style-type: none"> • Condition (1) • Standard (1) • Value (1) • Characteristics (1) • Features of a product (1) • Size(1) • Origin (1) • Agricultural considerations: farming practises/organic/free range/intensive farming/GM (1 mark for each) • Taste (1) • Flavour (1) • Appearance/colour (1) • smell (1) • Nutritional properties (1) • Cost/price (1) • Prior Preparation (1) • Packaging (1) • Labelling (1) • Marketing (1) • Advertising (1) • Ingredients (1) 	(1 x 2)
14f	<p>Explanation to include:</p> <p>Quality Assurance is a term used to:</p> <ul style="list-style-type: none"> • define the overall standard/promise/guarantee/agreement of a food product (1) <p>Quality Control is a term used to:</p> <ul style="list-style-type: none"> • Check/make sure/test the quality of a product throughout the food production system, it includes critical quality control points to make sure that all aspects of the specification are met (1). 	(1 x 2)

<p>14g</p>	<p>Discussion to address the following issues:</p> <p>The legal information required on a food label is:</p> <ul style="list-style-type: none"> • Name of the food. This must also include a description of the food product, if the name of the product does not make this clear. • Ingredients listed in descending order of weight. This will inform consumers about the ingredients used to make the food product. Food additives and water must also be listed. • Additives in the food product. It is likely that these will be named 'clean labels', and may also include an E number. • Instructions for use, cooking and storage. This informs the consumers how to store, cook and use the food product in order to prevent food spoilage. Temperature and time control guidelines help the consumer to ensure food will be safe to eat, if the instructions are followed correctly • Net quantity. Most pre-packed food is required to show the net weight or volume. If food is not sold pre-packed, the quantity or volume must be shown. This allows consumers to compare the cost of food products to determine value for money. • Name and address of the manufacturer allows consumers to contact manufacturers in cases of faulty goods or to seek further advice about products. • Place of origin informs consumers the place where the food has come from. • Special claims inform the consumer about the suitability of a food product for people with intolerances and allergies to specific foods. Any specific nutritional claims must be supported with evidence to justify and substantiate the claim. GM and organic foods are also clearly labelled where appropriate. • Processing treatments. The name of a food must include an indication of its physical condition or treatment, where it could be misleading if that information is not available on the label. • Date mark system. This informs the consumers about the length of time the product can be kept in optimum condition. • 'Use by date' is for high risk, perishable foods (raw and cooked meats, chilled foods, dairy products). The day and month is shown, as well as any storage conditions that must be followed 	
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	<ul style="list-style-type: none"> • 'Best before date' is for low risk foods (crisps, biscuits or foods that have undergone processing treatments to extend their shelf life e.g. UHT milk). The day, month and year will be shown. After this date, the sensory characteristics (taste, flavour, colour, smell, texture) of the food will deteriorate. <p>Voluntary information:</p> <ul style="list-style-type: none"> • Bar code • Serving instructions • Disposal of packaging • Special diets • Opening instructions • Advertising and marketing 	(6)
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