

Mark Scheme (Results)

Summer 2010

GCSE

GCSE Design and Technology:
Food Technology (5FT02)
Paper 01.
Knowledge and Understanding of
Food Technology.

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Mark Scheme that require the help of a subject specialist, you may find our **Ask The Expert** email service helpful.

Ask The Expert can be accessed online at the following link:

<http://www.edexcel.com/Aboutus/contact-us/>

Summer 2010

Publications Code UG023722

All the material in this publication is copyright

© Edexcel Ltd 2010

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.	B	1

Question Number	Answer	Mark
2.	C	1

Question Number	Answer	Mark
3.	A	1

Question Number	Answer	Mark
4.	C	1

Question Number	Answer	Mark
5.	B	1

Question Number	Answer	Mark
6.	A	1

Question Number	Answer	Mark
7.	B	1

Question Number	Answer	Mark
8.	D	1

Question Number	Answer	Mark
9.	A	1

Question Number	Answer	Mark
10.	C	1

Question Number	Answer		Mark
11.(a)	Piping bag	Piping potato/icing/meringue/choux pastry/cream/decorating cakes (1)	(4)
	Wooden spoon	mixing/creaming/beating/s Stirring hot liquids/foods (1)	
	Microwave oven (1)		
	Vegetable/fruit peeler (1)		
	4x1		
	Total marks		4

Question Number	Answer	Mark	
11.(b)(i)	One answer given from: Cornflour/plain flour/Self raising flour (1)		
	1x1	(1)	
	Total marks		1

Question Number	Answer	Mark	
11.(b)(ii)	One answer given from: Energy/warmth/insulation/aids digestion (1)		
	1x1	(1)	
	Total marks		1

Question Number	Answer	Mark	
11.(b)(iii)	Two given from: <ul style="list-style-type: none"> • Colour (1) • Flavour/taste (1) • Adds moisture (1) • Texture (1) • Binding ingredients together/combining/holding (1) • Coating (1) • Glazing (1) • Improve appearance (1) • Nutritional value (1) 		
	1x1 1x1	(2)	
	Total marks		2

Question Number	Answer	Mark
11.(c)	<p>One reason explained from:</p> <ul style="list-style-type: none"> • Can produce a variety of flavours/styles (1) so limited quantities are needed (1) • Cheaper to batch produce (1) as ingredients can be bulk bought (1) • Ensures consistent quality (1) when making different batches (1) • Reasonable shelf life/stores well (1) so can make a large amount (1) • High demand/turnover (1) as product is popular (1) • Alter recipes (1) to meet consumer demand (1) <p>Statement and linked explanation</p> <p style="text-align: right;">2x1</p>	(2)
	Total marks	2

Question Number	Answer	Mark
11.(d)	<p>One reason explained from:</p> <ul style="list-style-type: none"> • Time saving/quick/reference to speed/fast (1) because it reduces the number of processes in the manufacturing/assembly production line (1) • Ensures consistency/reliability (1), therefore each product is the same (1) • Reduces waste (1) because the manufacturer can order in the number of components required (1) • Cost effective (1) because manufacturer does not have to purchase large/new machinery/make it themselves/pre-made (1) <p style="text-align: right;">2x1</p>	(2)
	Total marks	2

Question Number	Answer	Mark
11.(e)	<p>Three reasons stated:</p> <p>Preservatives: To keep product longer or/prolong/increase shelf life of product (1) make food safe to eat</p> <p>Flavours: To restore/enhance/improve/replace/substitute tastes lost during processing/taste better (1)</p> <p>Colours: To improve final appearance/ so it is appealing/appetising/attractive/restore colour lost during processing (1)</p> <p style="text-align: right;">3x1</p>	(3)
	Total marks	3

Question Number	Answer	Mark
11.(f)	<p>Two description from:</p> <ul style="list-style-type: none"> • Low fat cheese/skimmed /semi skimmed milk/low fat/crème fraiche/quork/low fat margarine/Benecol spread/vegetable spread, (1) milk to reduce saturated fat/cholesterol content which can contribute to clogging of arteries (1) • Replace beef mince with low fat alternative (lean beef/chicken/quorn/fish/soya) (1) to reduce overall fat content, but retaining protein content (1) • Replace beef mince with all or half vegetables (1) to increase fibre content/as part of 5 a day scheme/polyunsaturated fat, which can reduce absorption of fat in the intestine/bulk diet to reduce hunger (1) • Remove cheese sauce and create bolognaise sauce for pasta; (1) to reduce cholesterol levels/saturated fat content. (1) • Use homemade beef stock (1) as stock cubes often have a high salt content which can contribute to high blood pressure/stroke (1) • Wholemeal flour (1) to increase NSP content (1) • Drain excess fat from meat (1) to reduce fat content/ow fat spray/dry fry onion to reduce fat content (1) • Replace beef mince with all or half veg to increase fibre content (1) which reduces absorption of fat in the intestine (1) • Low fat oil/spray/dry fry onions (1) to reduce fat content (1) <p style="text-align: right;">2x1 2x1</p>	(4)
	Total marks	4

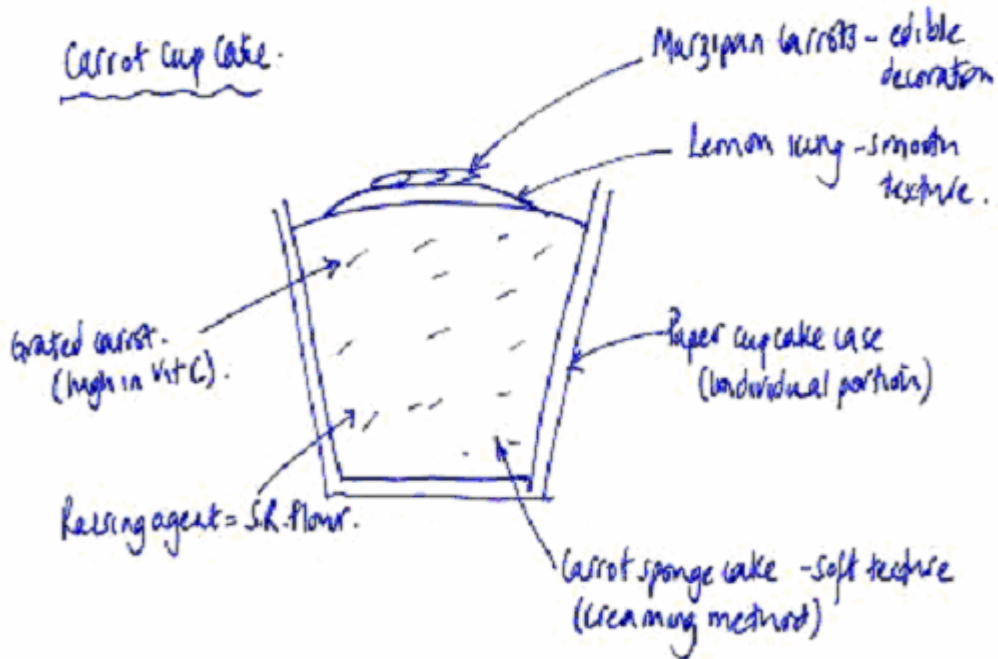
Question Number	Answer	Mark
12.	<p>Design idea 1</p> <p>Candidates may answer any specification point in either graphical form or by annotation.</p> <ul style="list-style-type: none"> <li>• Be suitable for young children (1): demonstrates an understanding of a cake product which is suitable for a child. (Shape, colour, decoration, no nuts, size of decoration, mild flavour) <li>• Be a single portion (1): paper cake/muffin case or use of a bun tin or a single portion of a large cake/weight of product/sketched against a hand/indication of portion size/tray bake/slice. <li>• Be a handheld product (1): size or dimensions suitable for a handheld product are evident or easy to eat without cutlery or will not fall apart when held by hand/in a napkin/ on a plate. <li>• Have a range of textures (1): evidence of two textures (soft/smooth/crispy/spongy). <li>• Demonstrate at least one cake making technique (1): whisking/all in one/creaming/rubbing in /melting methods/fruit cake. <li>• One edible decoration (1): icing/spun sugar/marzipan fruit or veg/sugar craft/grated peel/cherries/chocolate/fruit/icing sugar/piped cream/cream cheese topping <li>• One ingredient high in vitamin C (1): citrus fruits, fresh fruit or veg/named fruit juice. <li>• One raising agent (1): S.R Flour/baking powder/bicarbonate of soda/sieved plain or self raising flour to incorporate air/whisked eggs to incorporate air/creamed fat and sugar to incorporate air into the mixture. 	(8)

Example of candidate response:

Q12.

Design 1

Carrot cup cake.



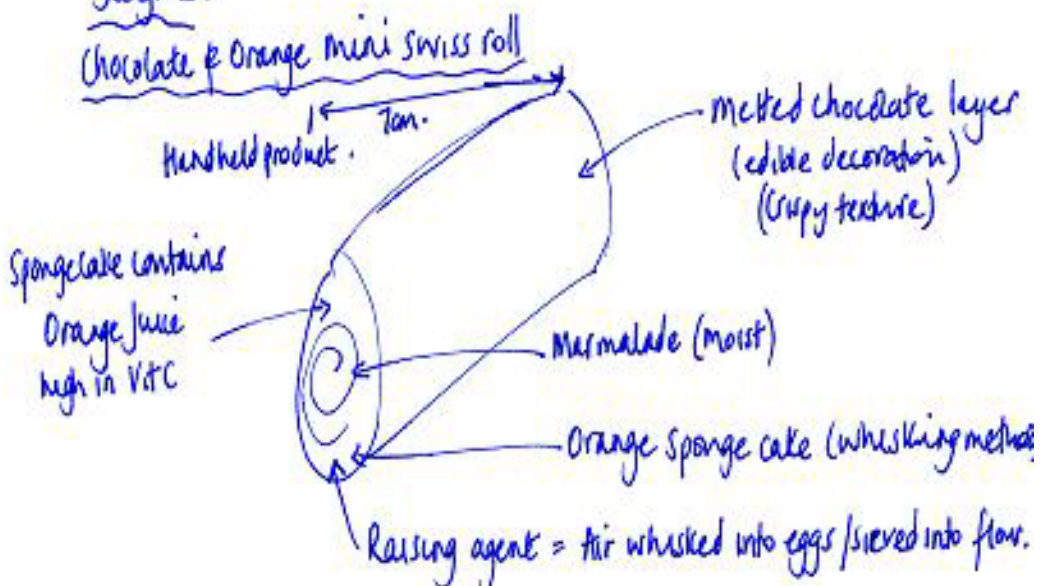
Design idea 2

Marks for design idea 2 can only be awarded where specification points are resolved differently than in design idea 1.

Example of candidate response:

Design 2.

Chocolate & Orange mini swiss roll



(8)

Total marks

16

Question Number	Answer	Mark
13. (a)	<p>One property and linked justification given from:</p> <ul style="list-style-type: none"> • Property: strong/hard texture (1) • Justification: pastry sets/holds its shape when filled with other ingredients (1) <p>(or vice versa)</p> <ul style="list-style-type: none"> • Property: easy to shape/cut (1) • Justification: pastry pliable and easy to handle (1) <ul style="list-style-type: none"> • Property: structure of pastry is firm (1) • Justification: does not crumble (1) <ul style="list-style-type: none"> • Property: baked blind to enhance texture/crisp texture (1) • Justification: does not become soggy when wet filling is inside flan (1) <ul style="list-style-type: none"> • Property: contains fat (1) • Justification: fat content improves shelf life (1) <ul style="list-style-type: none"> • Property: sweet (1) • Justification: contains sugar (1) <p>Not possible to have justification without the property</p> <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
13. (b)	<p>One advantage given from:</p> <ul style="list-style-type: none"> • Even thickness/same thickness (1) • Consistent shape/same shape (1) • Uniform cooking due to greater surface area/faster cooking/quicker cooking (1) • Aesthetics/presentation/appearance/design (1) • Quick/speedy/fast method of preparation (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
13. (c)	<p>One explanation from:</p> <ul style="list-style-type: none"> • Prevent browning/discolouration of fruit (1) due to high acidity/sugar levels in glaze (1)/improving appearance/to extend shelf life/to improve appearance/shine/glossy appearance (1) due to smooth gel applied to fruit (1) • Enhance appearance (1) by adding texture and colour to fruit (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
13.(d) (i)	<p>One reason explained from:</p> <ul style="list-style-type: none"> • The fruit flan is edible hot or cold as it is already cooked (1) so no risk of food poisoning (1) • The fruit flan can be reheated and it will retain its shape/structure (1) as the fruit flan has already been cooked (1) • Flavours will remain unaffected (1) by reheating (1) <p style="text-align: right;">2x1</p>	(2)

13. (d) (ii)	<p>One reason explained from:</p> <ul style="list-style-type: none"> • The fruit flan does not contain any high risk foods/perishable (1), which could cause food poisoning (1). • The fruit flan may be sold chilled at 4°C to prevent contamination (1) The storage instructions on the packaging will inform consumers that they must do the same, if the storage life is to be up to 5 days (1) • The glaze contains a high percentage of sugar/acid (1) which acts as a short term preserving agent, to prevent the discolouration of the fruit (1) • The fruit flan may be sold chilled and frozen at home/sold frozen (1), with a storage life of up to one month (1) • Glaze(1) prevents browning (1) <p style="text-align: right;">2x1</p>	(2)
-----------------	--	-----

13. (e) QWC	<p>Six relevant bullet points for three comparisons addressing recipe A and B.</p> <p>Evaluation to address the following issues:</p> <ul style="list-style-type: none"> • Recipe B uses standard components/ready made ingredients which saves time/labour/ensures consistent quality. Recipe A does not. • For Recipe B thickening agent is used to prevent excessive moisture coming into contact with the pastry base, thus affecting the texture and appearance of the product. • Recipe B contains standard components that contain additives; this assists with the quality of the product. Recipe A is additive free. • Manufacturers are trying to reduce the additives that they use in products due to consumer demand and safety. In Recipe B additional salt and fat are added to the recipe to extend the shelf life of the product. • Recipe B is likely to be cheaper than Recipe A as cost per unit is cheaper than buying fresh/less wastage. • Recipe B is easier to produce than Recipe A as automated processes uses less equipment. • Recipe A might use seasonal/locally produced apples. Recipe B might be brought in. 		
Total marks		16	
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)	<p>Two given from:</p> <ul style="list-style-type: none"> • Recycle (plastic/glass/cardboard/paper/tin) (1) • Reuse (refill containers/ alternative use) (1) • Reduce (carrier bags/bags for life)/ conservation of natural resources (1) • Reduce food packaging due to landfill/reduce litter/reduce pollution (1) • Educating the consumer about disposing of packaging. • Use of biodegradable materials (1) • Use of non-toxic inks/harmful chemicals (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14. (b)	<p>Three given from:</p> <ul style="list-style-type: none"> • Ingredients list in descending order of weight (1) • Name of product (1) • Name and address of manufacturer (1) • Evidence to support special claims (nutritional analysis) (1) • Weight of product (1) • Description of the product, if it is not clear what the product is, from the name of the product (1) • Origin (1) • Date mark (1) <p style="text-align: right;">3x1</p>	(3)

Question Number	Answer	Mark
14. (c)(i)	<p>One reason explained:</p> <ul style="list-style-type: none"> • Personal dislike of meat (1) because of taste/flavour/appearance/texture (1) • Ethical reasons (1): object to animals being killed/object to the ways animals are reared/living conditions of factory farmed animals (1) • Religious/cultural beliefs (1) eating meat not allowed (1) • Health reasons(1) as meat is high in saturated fat (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14. (c)(ii)	<p>Two disadvantages given from:</p> <ul style="list-style-type: none"> • May involve GM process (1) • Artificial product/unnatural (1) • Long term effects are unknown (1) • An expensive process, with the costs passed onto the consumer (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14. (c)(iii)	<p>Two explanations given from:</p> <ul style="list-style-type: none"> • New foods are developed because the biological process (1) produces different chemical reactions/biological processes e.g. rennet to set cheese.(1) • Products have improved characteristics/protein content (1) because biotechnology allows improved breeding techniques to be used.(1) • Changes to foods can be speeded up (1) because GM biotechnology allows genes to be modified quickly (1) • Biotechnology allows protein to be produced in a way (1) that is not dependent on weather/farming conditions (1) • Creates a uniform shape (1) this enables a consistent product (1) • Provides a vegetarian alternative (1) which enables increased market share/profit (1) • Same colour (1) • Taste improved (1) <p style="text-align: right;">2x1 2x1</p>	(2)

Question Number	Answer	Mark
14. (d) QWC	<p>Indicative content</p> <p>Discussion to address the following issues:</p> <p>Safety Issues:</p> <ul style="list-style-type: none"> • Risk assessment procedures (HACCP) • Personal hygiene: overalls/hair/hands/first aid/jewellery/sickness and diahorrea • Food hygiene: correct handling/cooking/storage/danger zone • Kitchen hygiene • Cross contamination • Food spoilage • Food poisoning: factors affecting growth(food, moisture, time, pH, O₂, temperature) <p>Quality issues:</p> <ul style="list-style-type: none"> • Control (visual inspections/weight/sampling/metal detector tests) • Checking quality at beginning and end of production. • Quality assurance (standards, monitoring procedures, legal requirements, product design specification) • Accurate weighing and measuring. • Use of critical dimensions and tolerances. • Quality of design (easy to make, clear specification, clear production process, target group) <p>At least one answer from safety issues and one answer from quality issues are needed in the discussion. Candidates may add any further number to achieve full marks.</p>	(6)
Total marks		19
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 concerning safety and quality. 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.

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481

Email publications@linneydirect.com

Order Code UG023722 Summer 2010

For more information on Edexcel qualifications, please visit www.edexcel.com/quals

Edexcel Limited. Registered in England and Wales no.4496750
Registered Office: One90 High Holborn, London, WC1V 7BH