

Design and Technology (Food Technology)

General Certificate of Secondary Education

Unit **A524**: Technical Aspects of Designing and Making

Mark Scheme for January 2012

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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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Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annesley
NOTTINGHAM
NG15 0DL

Telephone: 0870 770 6622
Facsimile: 01223 552610
E-mail: publications@ocr.org.uk

Annotations

Annotation	Meaning
	Unclear
	Benefit of doubt
	Caret sign to show omission
N/A	Highlight
	Level 1
	Level 2
	Level 3
	Repeat
	Noted but no credit given
	Tick

Subject-specific Marking Instructions

Marking crossed out and duplicated answers

OCR currently provides examiners with 'rules' for marking crossed out answers (which may be partially or wholly correct) and duplicated answers. Duplicated answers refer to two (or more) alternative responses to the same question, or responses to more optional questions than required within the paper rubric.

The rules are as follows:

Crossed out answers

- where a candidate crosses out an answer and provides an alternative response the crossed out response is not marked and gains no marks
- where a candidate crosses out an answer to a whole question, but makes no second attempt and the inclusion of the answer would not cause a rubric infringement, the assessor should attempt to mark the crossed out response and award marks appropriately.

Duplicated answers

- normally all responses are marked and the highest mark given
- where alternate answers are provided to a multiple choice question, no mark should be awarded (for example: following a request to tick one box, the candidate ticks two or more boxes)
- where the candidate provides contradictory responses, no mark should be awarded (for example: the candidate writes a statement such as 'water freezes at 0oC this means it is a liquid at -10oC'). The candidate, here, does not seem to understand the context of the 'question'
- where the candidate has adopted a 'scattergun' approach by providing multiple answers to a single response question, no mark should be awarded unless all answers are correct.

Question		Answer	Marks	Guidance
1	(a)	<p>One x one mark for each correct rule. 4 x 1 marks</p> <ul style="list-style-type: none"> • Wash hands before handling food/after going to the toilet/blowing nose/smoking/when entering the food prep area/use antibacterial hand wash/use paper towels or hot air dryer for drying hands/clean hands • Wash hands after handling raw meat or high risk food. • Do not touch hair/nose/face/mouth/scabs/spots/cuts/no eating • Wear protective clothing - apron/overalls/chefs whites/gloves/ sleeves rolled up • Don't cough/sneeze • No smoking near food • If you are feeling sick/diarrhoea report it to the supervisor or don't handle food • Clean fingernails/keep fingernails short/no nail varnish/no false nails • No jewellery/rings/watches • Cover cuts/scabs with a (blue) plaster • Walk through sanitised bath to clean protective boots as they enter the food prep area • Put long hair up/tie back/wear protective head wear/hair net/hat/beard net to keep hair away from food. 	4	<p>Answers must be personal hygiene not general hygiene Accept – do not pick nose/spots wash hands</p> <p>Do not accept –</p> <ul style="list-style-type: none"> • do not handle foods with a cold/flu • clean clothing • cleaning work surfaces • raw foods from cooked • correct cleaning materials. • ill/unwell

Question	Answer	Marks	Guidance
(b)	<p>One mark for each correct answer. 3 x 1 marks</p> <ul style="list-style-type: none"> • Point down when cutting/chopping • Hold properly//firm grip • Hold knife by the handle not the blade/pass knife by blade/ • Use the correct knife for the job • Hold food correctly/claw grip/bridge grip/fingers out of cutting path • Keep them sharpened • Wear protective clothing/chain mail • Make sure handles are not greasy/wet/have dry hands • Cut on a stable surface/chopping board • Store correctly/in a knife block/drawer • Don't leave lying around • use clean knife/wash after use to avoid cross contamination • Care when washing/don't leave in a bowl of water/clean immediately after use. • Concentrate/use carefully • Carry the knife point down 	3	<p>Do not accept – don't run with them keep away from children keep clean don't play with it keep fingers away mess around</p>

Question		Answer	Marks	Guidance
	(c)	<p>Two x One mark for each correct answer. 2 x 1 mark Two required.</p> <ul style="list-style-type: none"> To control bacterial growth/microbial growth/yeasts/moulds/enzymes To prevent food poisoning/make sure its safe to eat To check whether food is cooked properly/thoroughly /not over or under cooked Part of a HACCP system/danger zone – credit anything that comes under HACCP system 	2	Do not accept: Going off
	(d)	<p>One mark for each point made 3 x 1 marks</p> <ul style="list-style-type: none"> Products are cooked/prepared first Cooling rapidly prepared products/completely cold/ cooled down Cooled to 0° to 8°C 90 mins to quickly slow down bacteria growth Chilled foods must be stored at below 4°C. 	3	Look for accurate facts – eg rapidly cooled 90 mins to quickly slow down bacterial growth correct temperatures.
		Total	12	

Question		Answer	Marks	Guidance
2	(a)	<p>One mark for named method 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • Creaming • Whisking • All in one. • Rubbing-in • Melting 	2	<p>Do not accept mixing/beating/folding</p> <p>Accept Batch production continuous production</p>
	(b)	<p>One mark for each function 4 x 1 mark Four required</p> <p>Self Raising Flour:</p> <ul style="list-style-type: none"> • Raising agent/helps cakes rise • Bulk • Forms main structure. <p>Margarine</p> <ul style="list-style-type: none"> • Adds colour • Adds flavour/taste/enriches • Holds air bubbles/holds air/light and fluffy • Extends shelf life • Increases moisture/prevents drying out • Shortens flour mixture/Improves texture/mouth feel. <p>Egg</p> <ul style="list-style-type: none"> • Adds colour • Adds flavour/taste • Aeration/traps air/makes cakes rise • Binds ingredients together/sticks/holds it together • Coagulates/sets the mixture. <p>Vanilla essence</p> <ul style="list-style-type: none"> • Adds flavour/taste • Improves aroma. 	4	Do not accept the same function twice.

Question	Answer	Marks	Guidance
(c)	<p>One mark for each correct answer. 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • Improve the appearance/look nice/attractive • To give a professional finish • Appeal to a specific target group • Increase the sales/adds value • Make the cakes unique/for a special occasion. • Improves the texture • Improves the flavour/taste better 	2	<p>Do not accept: Increase the sugar content One word answers eg taste/texture</p>
(d)	<p>One mark for each correct point. Maximum 2 2 x 1 mark for a full explanation of one issue 2 x 2 required.</p> <ul style="list-style-type: none"> • Saves time on preparation-quicker to prepare than from scratch/speeds up production • Saves staff training/skills/no need to employ as many staff – so saves money • Reduces the production costs – as less equipment is needed • Quality is guaranteed – made by experts/ensures consistency/identical/good quality/less chance of errors/professional so therefore they sell more • Arrive ready made – saves relying on several suppliers/don't have to make them yourself. • May be cheaper than producing own from scratch – as don't have to have the equipment/components can be bulk bought • No wastage because they only buy in what they need 	4	<p>Do not accept—faster/quicker/cheaper/easier unless qualified</p>
	Total	12	

Question		Answer	Marks	Guidance
3	(a)	<p>One mark for each correct answer. 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • States the general details/criteria/parts/requirements of the product that is to be developed • A checklist for evaluation throughout the development of the product/final product • To develop a new product • To develop a product that will sell • To make changes in a product as it develops • To enable the manufacturer to get design ideas • Modify recipes to meet target group needs • To meet specific criteria eg low fat, etc • To develop a high quality product • Know what ingredients to use/buy in 	2	
	(b)	<p>One mark for each correct answer. 4 x 1 mark Four required</p> <ul style="list-style-type: none"> • Adequate supply of protein • Rich in iron • Higher in calcium/phosphorous • Vitamin C/D • Rich in folic acid. • Lower in fat • Lower in sugar • Lower salt • Higher in fibre • Rich in carbohydrates • Little preparation needed/quick to prepare/quick to cook/reheat • Follow Eat Well Plate/balanced meal/correct portion size • 5 A Day/includes fruit and vegetables • Does not contain artificial colours/flavours/ mayonnaise/ raw egg/alcohol/shell fish • Not too spicy 	4	<p>Do not accept</p> <ul style="list-style-type: none"> • Vitamins & minerals – must be named • Single words ie Protein • High in Vitamin A • Healthy to mother and baby • Generic specification points like attractive

Question		Answer	Marks	Guidance	
				Content	Levels of response
3	(c)	<p>Explanation could include any of the following points.</p> <p>Dietary trends.</p> <ul style="list-style-type: none"> Increased obesity/CHD/Blood pressure. Demand for 'healthier' meals eg lower in fat/salt/sugar or higher in fibre/improved nutritional value <p>Specific Dietary Needs</p> <ul style="list-style-type: none"> Increase in vegetarian/vegans/ specific meals for babies/children/ allergy/additive gluten free/calorie control. Any named target group. <p>Lower incomes</p> <ul style="list-style-type: none"> Credit crunch/recession/Increase in unemployment/Single parent families. More elderly/eg 'Value' ranges/BOGOF/Special offers. <p>Home entertaining</p> <ul style="list-style-type: none"> People stay at home instead of eating out/Increase in 'luxury products' eg meal for two dine for £10. <p>Greater awareness of the environment</p> <ul style="list-style-type: none"> Carbon footprint/Co² emissions/Using local produce/Seasonal foods/Organic foods. 'Buy British' products/Organic products/Artificial additive free products/sustainably produced foods. 	6	<p>Candidates may use examples from different points. Look out for repetition.</p> <p>When marking 'Levels of response' questions if answers are presented as a simple list then award Level 1 max and a specific mark 0,1 or 2 dependent on quality of list.</p> <p>Do not apply ticks or annotations except Level 1, 2 or 3. Mark these by reading all the answer and decide on an appropriate level then a specific mark.</p> <p>Specialist terms that may be used: Obesity Environment Genetically Modified Organic Multi-cultural Additive free GDA Lifestyle Economics Recession</p>	<p>Level 1: (0–2 marks) Basic explanation, showing limited understanding of the changes in society and the influence on the range of ready meals available. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of grammar, punctuation and spelling may be intrusive.</p> <p>Level 2 (3–4 marks) Adequate explanation, showing some understanding of the changes in society and the influence on the range of ready meals available. 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>Level 3 (5–6 marks) Thorough explanation, showing detailed understanding of the changes in society and the influence on the range of ready meals available. Specialist terms</p>

Question		Answer	Marks	Guidance	
				Content	Levels of response
		<p>Stronger ethical/moral issues</p> <ul style="list-style-type: none"> Refusing genetically modified products/animal welfare/Organic foods/Free range foods/Fair Trade produce. <p>Cultural issues/Multi cultural society</p> <ul style="list-style-type: none"> Religious beliefs prevent people eating certain products (examples of specific religions)/Ranges of very specific products for migrants/Examples of specific named countries. Eg Eastern European products. <p>Lifestyle</p> <ul style="list-style-type: none"> 2 parents working/Less time in the kitchen/Families eating at different times/snacking/Long working/travelling days/more social activities – Increase in snack foods/microwave meals/ready meals/ready prepared veg and fruits (both fresh and frozen). Lack of skills <p>Increased Technology</p> <ul style="list-style-type: none"> Freezers/packaging/transportation etc <p>More people live alone</p> <ul style="list-style-type: none"> Demand for single portions. <p>Travel abroad</p> <ul style="list-style-type: none"> Influence of cultures/travel/new experiences. 			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.
		Total	12		

Question		Answer	Marks	Guidance
4	(a) (i)	<p>One mark for each correct answer. 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • Reduce quantity of oil/use spray oil • Buy lower fat/lean minced beef • Dry fry the beef/drain the fat off the beef • Change Beef to:– chicken/turkey/Quorn/soya mince • Reduce quantity of meat • Add a named vegetable. 	2	Do not accept just ‘smaller portions’.
	(ii)	<p>One mark for each correct answer. 4 x 1 mark Two required</p> <p>Vitamin A</p> <ul style="list-style-type: none"> • Keeps eyes healthy • Improves night vision/prevents night blindness • Helps maintains skin • Antioxidant/may protect against cancer • Improves mucus membranes. <p>Vitamin D</p> <ul style="list-style-type: none"> • Works with calcium prevents softening of the bones • Maintains strong bones/prevents– brittle bones/osteoporosis/rickets • Maintains strong teeth. <p>Vitamin E</p> <ul style="list-style-type: none"> • Antioxidant • Helps make red blood cells • Prevents blood from clotting. <p>Vitamin K (soya and rapeseed oil)</p> <ul style="list-style-type: none"> • Maintains bone health • Formation of protein in bones • Helps blood clotting. 	4	Must state the vitamin to get a mark.

Question			Answer	Marks	Guidance
4	(b)	(i)	<p>One mark for each correct answer. 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • Add grated carrot/chopped courgette/any named suitable vegetable/increase onion • Change spaghetti to Wholemeal spaghetti • Change Beef to:- Quorn/soya mince • Use freshly chopped herbs • Use fresh tomatoes/leave skins on tomatoes/increase tomatoes • Add pulses/nuts/dried fruit/seeds • Increase the ratio of spaghetti to sauce 	2	<p>Do not accept 'brown spaghetti'. More dried herbs More garlic Served with additional foods eg garlic bread</p>
		(ii)	<p>One mark for each correct answer. 2 x 1 mark Two required</p> <ul style="list-style-type: none"> • Helps food move through the digestive system/good for/function correctly/producing a good/healthy digestive system • Prevents constipation/piles • Holds water/keeps faeces soft and bulky • Prevents bowel disorders/ bowel cancer/diverticular disease/appendicitis • Helps control weight/feel full so eat less • Helps lower blood cholesterol/removes cholesterol • Helps control blood sugar levels. 	2	Do not allow one word answers
	(c)		<p>One mark for each correct answer. 2 x 1 mark 2 marks for a full explanation of one idea</p> <ul style="list-style-type: none"> • Pie with a layered/cubed/grated/topping of vegetables eg sweet potato • Named pasta shapes/Rice/couscous/noodles – with sauce in a bake • Named pastry eg filo parcels/vol au vents/suet dumplings/roly-poly • Stuffed pancakes/stuffed peppers or other named vegetable. 	2	<p>Sauce poured over other ingredients allow maximum 1 mark</p> <p>Not lasagne Not 'different' pasta</p>
			Total	12	

Question	Answer	Marks	Guidance																																								
5 (a)	<p>Four marks for clearly showing how they have met the specification</p> <p>Colourful</p> <ul style="list-style-type: none"> • Named coloured vegetable. <p>Well flavoured</p> <ul style="list-style-type: none"> • Stock/wine/lemon juice • herbs/spices/garlic/pepper/chilli • soya sauce/tomato puree any named sauce • salt • onion <p>Protein</p> <ul style="list-style-type: none"> • Named meat/fish/poultry • Addition of cheese • Named pulses(beans/lentils) • Milk in stock. <p>Examples of foods in season</p> <table border="1"> <thead> <tr> <th>Winter</th> <th>Spring</th> <th>Summer</th> <th>Autumn</th> </tr> </thead> <tbody> <tr> <td>Cabbage</td> <td>Cauliflower</td> <td>Tomatoes</td> <td>Beetroot</td> </tr> <tr> <td>Parsnip</td> <td>Sprouting</td> <td>Asparagus</td> <td>Celery</td> </tr> <tr> <td>Swede</td> <td>Broccoli</td> <td>Spring cabbage</td> <td>Turnip</td> </tr> <tr> <td>Kale</td> <td>Spring cabbage</td> <td>Broad beans</td> <td>Squash</td> </tr> <tr> <td>Leeks</td> <td></td> <td>Spinach</td> <td>Brussel Sprouts</td> </tr> <tr> <td>Carrots</td> <td></td> <td>Peas</td> <td>Pumpkin</td> </tr> <tr> <td>Named game</td> <td></td> <td>New potatoes</td> <td>Cooking apple</td> </tr> <tr> <td></td> <td></td> <td>Courgettes</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Green beans</td> <td></td> </tr> </tbody> </table>	Winter	Spring	Summer	Autumn	Cabbage	Cauliflower	Tomatoes	Beetroot	Parsnip	Sprouting	Asparagus	Celery	Swede	Broccoli	Spring cabbage	Turnip	Kale	Spring cabbage	Broad beans	Squash	Leeks		Spinach	Brussel Sprouts	Carrots		Peas	Pumpkin	Named game		New potatoes	Cooking apple			Courgettes				Green beans		4	<p>Candidates must state a season to be able to gain the food in season mark.</p> <p>The combination must create a realistic soup product that covers the specification points</p> <p>Allow named game/fish/meat in season.</p> <p>Accept month instead of season</p>
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Question		Answer	Marks	Guidance
	(b)	<p>One mark for each correct answer 2 x 1 mark</p> <ul style="list-style-type: none"> • Potato • Sweet potato • Marrow/courgette/pumpkin • Cornflour/corn starch • Arrowroot • Plain flour/flour • Named pulse vegetables eg lentils/split peas • Named grain eg pearl barley/rice • Modified starch/gravy granules • Double cream/yoghurt 	2	Do not accept just 'starch'

Question		Answer	Marks	Guidance	
				Content	Levels of response
	(c)	<p>Discussion could include any of the following points.</p> <p>Information on Packaging</p> <ul style="list-style-type: none"> • Legal requirements • Other information <p>Design for label/packaging</p> <ul style="list-style-type: none"> • Appeal to target group • Bright colours • Promotes sales eg 5 A Day/BOGOF/seasonal • Easy to print on <p>Material/Design of Packaging for Soup</p> <ul style="list-style-type: none"> • Shelf life eg metal can • Transportation/weight/stackability/sealable/leakage and contamination • Lightweight • Strong • Easy to open • Microwaveable 	6	<p>Specialist terms could include:</p> <ul style="list-style-type: none"> Biodegradable Sustainable resources Durable/stable Environmentally friendly Special diets/allergies Contamination 	<p>Level 1 (0–2 marks)</p> <p>Basic discussion, showing limited understanding of the factors a manufacturer would need to consider when designing suitable packaging material. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of grammar, punctuation and spelling may be intrusive.</p> <p>Level 2 (3–4 marks)</p> <p>Adequate discussion, showing some understanding of the factors a manufacturer would need to consider when designing suitable packaging material. There will be some use of specialist terms, although these may not always be used appropriately. The</p>

Question	Answer	Marks	Guidance	
			Content	Levels of response
	<p>Cost</p> <ul style="list-style-type: none"> • Cheap to produce – plastic/card/glass • Luxury/value designed packaging <p>Size/Shape</p> <ul style="list-style-type: none"> • Portion size • Easy to open <p>Storage</p> <ul style="list-style-type: none"> • Shelf life • Preservation methods • Chilled/ambient <p>Sustainable issues</p> <ul style="list-style-type: none"> • Should use materials formed from recycled materials/reduce the amount of packaging • Avoid using harmful processes with chemicals. • Bio-degradable/recyclable/re-used • Materials from sustainable forest <p>Mixed material packaging</p> <ul style="list-style-type: none"> • Difficult to recycle/Foil, plastic or card bonded together. 			<p>information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation.</p> <p>Level 3 (5–6 marks) Thorough discussion, showing detailed understanding of the factors a manufacturer would need to consider when designing suitable packaging material.</p> <p>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>When marking ‘Levels of response’ questions if answers are presented as a simple list then award Level 1 max and a specific mark 0,1 or 2 dependent on quality of list.</p> <p>Do not apply ticks or annotations except Level 1, 2 or 3. Mark these by reading all the answer and decide on an appropriate level then a specific mark.</p>
	Total	12		
	Paper Total	60		

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

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