



Design and Technology (Food Technology)

General Certificate of Secondary Education

Unit A524: Technical Aspects of Designing and Making

Mark Scheme for June 2013

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

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.

© OCR 2013

A524

Annotations

Annotation	Meaning
	Level 1
15	Level 2
	Level 3
	Noted but no credit given
✓	Tick

G	Questi	ion	Answer	Marks	Guidance
1	(a)	(i)	 One x 1 mark for each correct answer. 3 x 1 mark Three marks required Shortbread biscuits: Butter/Polyunsaturated Margarine/Sunflower oil. Salad dressing: Olive/sunflower Chicken stir fry: Sunflower Oil/Lard/Olive oil 	3	Do not use the same fat/oil on two or more answers. Candidates must state a specific fat/oil. ie Do not accept ' Fat 'or' Oil' Credit any other named oil for salad dressing eg walnut/rapeseed/peanut/flaxseed/hemp
1		(ii)	 One x 1 mark for each correct answer. 1 x 1 mark One mark required Low fat spread. 	1	
1		(iii)	 One x 1 mark for each correct answer. 2 x 1 mark Two marks required Grilling Stir Frying Dry frying Baking Steaming Poaching Microwaving. Slow cooking Boiling Smoking 	2	'Using the oven' is not a method of cooking Do not accept 'roasting'

Mark Scheme

Q	uestion	Answer	Marks		Guidance
				Content	Levels of response
1	(b)	 Explanation may include: We should cut back on total fat in diet Link between obesity and coronary heart disease CHD related to amount of fat in the diet A diet high in saturated fats is likely to be high in cholesterol. Animal fats are higher in saturated fat and they are the only ones that contain cholesterol. High fat diet may increase risk of developing type two diabetes and metabolic syndrome. A high fat diet can induce insulin resistance. Replacing saturated fatty acids with unsaturated fatty acids can lower blood cholesterol. Using polyunsaturated fats and oils as alternatives to animal based products will reduce level of cholesterol. Some low fat spreads contain animal fats. We should use substitute with monounsaturated fats/olive oil. Less fat may increase carbohydrate consumption- thus increasing vitamin and mineral content. A high fat diet suppresses immune-competence and enhances the risk for serious infectious disease and cancer. Obesity accelerates progression of osteoarthritis. Need to reduce the NHS bill as costs are high caring for people with obesity related disorders 	6	Discussion may include: Raised levels of Cholesterol is carried in the blood stream Cholesterol can build up and be deposited on the walls of arteries causing them to narrow. can increase the risk of high blood pressure and strokes Arteries become blocked by blood clots/plaque. The level of cholesterol in the blood depends on the amount of fatty acids in the diet Obese people: find it difficult to exercise have low self esteem are unhappy/depressed suffer bullying in school Do not award marks for: Methods of cooking Ways of improving diet.	 Level 3 (5–6 marks) Thorough explanation, showing detailed understanding of the link between obesity, coronary heart disease and fat in the diet. 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. Technical terms to look for: cholesterol/saturated fatty acids/polyunsaturated fatty acids/monounsaturated fatty acids/monounsaturated fatty acids/arteries/plaque/CHD/obesity Level 2 (3–4 marks) Adequate explanation, showing some understanding of the link between obesity, coronary heart disease and fat in the 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. Level 1 (0–2 marks) Basic explanation, showing limited understanding of the link between coronary heart disease, obesity and fat in the diet. 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. There may be only one or two word answers.

Questi	on Answer	Marks	Guidance
2 (a)	One x 1 mark for each correct answer. 4 x 1 markFour marks required1.Chalaza2.Air sac/Air space/Air pocket/Air bubble3.Yolk4.Albumen/white	4	Allow 'air' for one mark
2 (b)	One x 1 mark for each correct answer. 4 x 1 mark Four marks required Quiche: • Coagulation/setting/solidify/make solid • Adds colour • Adds flavour. Mayonnaise • Emulsion • Adds colour • Adds colour • Adds flavour. Mayonnaise • Emulsion • Adds colour • Adds flavour. Meringue • Aeration/holds air/foams/light and fluffy • Coagulation/setting/harden. Fish Fingers • Coating/enrobing/sticking /holding on breadcrumk • Coagulation/setting/formation of protective layer.	os	Do not accept any repeated answers. Eg Accept flavour only once. Do not accept nutritional value as the question asks for a 'function in the making'. Quiche : do not accept 'binding'/'thickening' 'Texture' must be qualified eg firm texture Mayonnaise : do not accepting 'binding' Do not accept 'holds together'/stops splitting' unless the candidate states the holding together of oil and vinegar Fish Fingers : Not 'colour'/'flavour'

Q	uestion	Answer		Marks	Guidance
2	(c)	Four marks requi	each correct answer. 4 x 1 mark red nt and 1 mark for its correct function	4	Watch for Scattergun on the responses to this question DO NOT ACCEPT PROTEIN – it is in the question!
		Nutrient	Function		Do not accept just vitamins/minerals
		Fat	Energy/insulation/protection of vital		
			organs/source of Vitamins A D E & K/structure of cells		The function must be the correct function for the named nutrient.
		Iron	Production of haemoglobin/red blood cells/carries oxygen around the blood/prevents anaemia		Do not accept 'helps flow of blood'/'healthy blood'
		Vitamin A	Healthy eyesight/night vision Helps maintain skin		Students may name specific named B nutrients eg Niacin/B12
		Vitamin D	Works with calcium to build and maintain bones and teeth. Nervous system		
		Calcium	Strengthens Bones and teeth		
		Vitamin B	Metabolism/growth/energy release Healthy skin and nerves/ Red blood cells/nerves		
		Folate/folic acid	Red blood cells/prevents Spina Bifida		
		Phosphorus	Bones/teeth/energy transfer		
		lodine	Regulation of metabolic rate		
		Selenium	Enzyme formation		
		Magnesium	Bones and teeth		

A524

Q	uesti	on	Answer	Marks	Guidance
3	(a)		 One x 1 mark for each correct answer that gives golden colour. 1 x 1 mark One mark required Wholemeal flour Soft brown sugar Apricots Margarine. 	1	
3	(b)	(i)	 One x 1 mark for each correct answer to improve flavour. 1 x 1 mark One mark required Dried fruits eg sultanas/cranberries Spices/named spice Nuts/named nut Chocolate Flavoured essences/extract Lemon/orange/rind zest/juice Herbs/named herbs Named fresh fruit Salt 	1	Do not accept the same answer twice for part (i) and (ii) Do not accept increases of existing ingredients as the question asks for an added ingredients. Accept any named suitable additional ingredient that would improve the flavour
3		(ii)	 One x 1 mark for each correct answer to increase crunchiness. 1 x 1 mark One mark required Nuts/seeds/coconut Oats/Named breakfast cereal Chocolate Sugar 	1	Look for chopped/grated to give crunchy effect. Accept any suitable additional ingredient that would increase the crunchiness

Qı	uestion	Answer	Marks	Guidance
3	(c)	 One x 1 mark for each correct answer for luxury quality appearance. 1 x 1 mark One mark required Drizzled chocolate/jams/icing Coated/enrobed with chocolate/icing Feather icing Glazed with fruit glaze/jam/egg wash/milk wash Piped butter cream/icing/frosting Shaped biscuits Fluted edges Dredged/sprinkled with cocoa/icing/sugar Layered with named nuts/fruits. 	1	Answers must not be linked to packaging Do not allow reference to 'all biscuits the same shape' 'decorating'
3	(d)	 One x 1 mark for each correct answer. 2 x 1 mark Two marks required To make decisions on product development – to ensure a successful product To identify areas for improvement/weaknesses – to ensure a successful product/improve flavour and/or texture Gather information about a product for advertising - to assess market potential Compare product with other similar products – to identify a gap in the market To gain sensory qualities of a product – to write a product profile/specification To see if meets consumer preferences – to ensure or increase sales To check it meets the specification – to meet target group needs For quality assurance – to make sure each batch is the same. 	2	 2 x 1 marks for two points. Two marks for more detailed explanation. The question relates to why the manufacture needs to use sensory testing.

Mark Scheme

Qı	uestion	Answer	Marks	Guidance
3	(e)	 One x 1 mark for each correct answer. 2 x 1 mark Two marks required Less human error/more reliable Accurate/efficient Choice of graphics/presentation Can be changed easily/quickly/kept up to date Comparisons with other products can easily be made Can be reproduced/emailed/copied easily Standard of presentation is neat/clear and easy to understand/ Professional appearance. Information can be stored/saved/easily retrieved Data can be produced easily and quickly 	2	Do not accept quicker/cheaper/faster/easier unless qualified. Accept Eg quicker to analyse results Easier to read results Note the question requires a benefit.
3	(f)	 One x 1 mark for each correct answer. 4 x 1 mark Four marks required Set up a quiet area/neutral surroundings Separate booths/compartments/blind testing Good lighting/coloured lighting Have tasting recording charts ready Make sure testers know how to complete the charts Use trained testers. Simple clear recording/response sheets Give simple clear instructions Do not allow testers to talk to each other Use Random codes for the products to prevent the testers being influenced Give testers a drink of water/biscuits to clear palate Use small quantities of food /identical size On plain plates Serve at the correct temperature for the food Use clean forks/spoons every time 	4	Credit any accurate four instruction points from this list

Q	Question			Answer	Marks	Guidance
4	(a)	(i)	One x 1 mark for each c Six marks required	orrect answer. 6 x 1 mark	6	Allow four marks for meeting the spec points in the design and 2 marks for annotation
			New salad product			Candidates must show how the specification points have been met.
			Be colourful	Named ingredient with colour described		Colourful and Textures will involve naming two ingredients and two colours/textures.
			Have a variety of textures	Textures of ingredients described eg: Crunchy/crisp/soft/creamy /cubed/sliced/grated		To gain six marks: Colourful : At least two named ingredients with colour stated. Textures : At least two named ingredients with textures of ingredients described
			Contain vitamin c	Named ingredients to provide vitamin C		Vitamin C : a named ingredient which is a good source of vitamin C
			Staple food	Named Staple Food eg: Rice/pasta/couscous/ quinoa/bulgar wheat/ pastry/potato/legumes/ bread croutons/sweetcorn		Staple Food: a named ingredients that is a staple food Do not give credit for food items not linked to the Specification.

Question	Answer		Guidance		
			Content	Levels of response	
4 (b)	 Comparison may include: Buying ready prepared: Advantages: Vegetables are picked and packed in peak condition The shelf life of the product is extended due to the processing Colour deterioration is reduced Easy to store Busy Life style-Ease of use/quick to prepare and cook/can eat straight away Vegetables look more appealing when prepared Encourages people to buy and eat more vegetables Less damage to fragile vegetables eg lettuce Out of season can be bought Exotic range of multi cultural vegetables Date marked for freshness Small quantities can be bought No wastage/less wastage Available in mixed vegetable packs – gives variety/Mixed packs can work out cheaper than buying individual. No skill/equipment required in preparation Packaged ready to eat May have added vitamins Wide range of vegetables available Cooking time is shorter so saving fuel energy 	6	 Discussion may include comparison with buying fresh Advantages Can buy local produce Can cook the amount needed Better flavour Can buy organic Disadvantages Do not know how long loose vegetables have been in the shop/No date marking May be loss of vitamin C due to oxidation May be lots of wastage. Longer cooking/ preparation required. 	Level 3 (5–6 marks) Thorough comparison, showing detailed understanding of the advantages and disadvantages of buying ready prepared vegetables. 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. Technical terms to look for: rate of decay/vitamin C loss/colour deterioration. Level 2 (3–4 marks) Adequate comparison, showing some understanding of the advantages and disadvantages of buying ready prepared vegetables. 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. Level 1 (0–2 marks) Basic comparison, showing limited understanding of the advantages and disadvantages of buying ready prepared vegetables. May only consider advantage or disadvantages not both. There will be little or no use of specialist terms. Answers may be ambiguous or	

Mark Scheme

Question	Answer	Marks	Guidance	
			Content	Levels of response
	 Disadvantages: Cost more than buying fresh Increased packaging materials used, some 4cannot be recycled Many have a high carbon footprint as they are transported from far and wide Packaging size may not suit customer needs (eg single people) May have added ingredients to create an enhanced flavour. 			disorganised. Errors of grammar, punctuation and spelling may be intrusive. There may be only one or two words.

C	Question		Answer		Guidance Allow one mark for a correct name of pastry. Method must match pastry.
5	(a)	One x 1 mark for each correct answer. 2 x 1 mark Two marks required:		2	
		Type of pastry	Method		
		Short crust/short	Rubbing in/All in one		
		Flaky/Puff/Rough Puff	Rolling and Folding		
5	(b)	One x 1 mark for each co Two marks required • Washing/cleaning • Peeling • Cutting • Slicing/ chopping/did • Coring • Stewing/boiling		2	 Processes in preparation Not the function of the method Do not accept cooking/micro waving Accept any correct reasonable process in the preparation of apples not the pastry

Question	Answer			Marks	Guidance
5 (c) O F	Dne x 1 mark for Four marks req Preservation Dried apple	or each correct answei quired	r. 4 x 1 mark Disadvantage Vitamins are lost Higher sugar content Texture is different/not juicy/ hard/not appealing Flavour is affected May need to soak Colour change More expensive Processing may affect the flavour/colour Texture may be different Vitamins are lost May contain added sugar Could be expensive Cannot see the apples Can cannot be used in a microwave Once open needs to be used quickly	4 4	Guidance Do not accept cheaper/easy /healthier unless qualified. Do not accept the same answer twice or a negative of the first answer.

Question		on	Answer		Guidance
5	(d)	(i)	 One x 1 mark for each correct answer. 2 x 1 mark Two marks required Temperature control of the pies at -18°C or 	2	Do not accept 'right temperature'./'sell by date'/'product is safe'/packaged correctly
			 below/make sure the pies are frozen /not defrosting Delivered in a freezer van/has van been maintained at the correct temperature? Cleanliness of lorry Date checking/Display until/Best before/Use by Seals on packaging of the boxes/damage Visual check of pies/appearance 		Must be an actual check. Not just 'packaging' Example. Make sure that the packaging is not damaged. Check that they are correctly date marked.

Question	Answer		Guidance
5 (ii)	 One x 1 mark for each correct answer. 2 x 1 mark Two marks required Customer satisfaction – to maintain sales To know that the products are safe to eat – temperature below -18°C during transportation To check for further contamination – damaged packaging leads to contamination by mice/flies/dirt Ensures that the products are fresh and not old stock- to avoid customers getting food poisoning/stock dating To meet food safety standards and food safety laws – to protect customers returning goods – loss of customers. Must be suitable to be sold – can be rejected – no wastage 	2	 2 x 1 marks for two points. Two marks for more detailed explanation. Example: If the seals on the packaging are damaged it may have been contaminated during transportation and so the customers may be at risk of food poisoning.

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

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee Registered in England Registered Office; 1 Hills Road, Cambridge, CB1 2EU Registered Company Number: 3484466 OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations) Head office Telephone: 01223 552552 Facsimile: 01223 552553





© OCR 2013