

Design and Technology

General Certificate of Secondary Education **1954/03**

Food Technology Paper 3

Mark Scheme for June 2010

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of pupils of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, OCR Nationals, 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 2010

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

Question Number			Expected Answers	Marks	Additional guidance
1	(a)		3 x 1 mark <ul style="list-style-type: none"> Wash hands before handling food/after using toilet/blowing nose/sneezing/smoking/after handling raw meat or high risk food/when entering the food prep area Use antibacterial handwash Use paper towels/hot air dryer for drying hands Do not touch hair/face/mouth/nose/don't pick scabs/don't pick spots/don't pick cuts/don't pick nose Don't cough/sneeze over food/No smoking near food If you are feeling sick/don't handle food if have stomach upset/report illness to supervisor Clean fingernails/keep fingernails cut short/no nail varnish/no nail extensions/false nails No jewellery/rings/watches Hair tied back/wear hat/hair net Cover scabs/cuts with (blue) plaster (Wear)apron/plastic gloves/plastic shoe covers/beard net/sleeves rolled up/clean clothing every day/wash clothing regularly Do not wear uniform on journey to work/change into uniform in changing room Walk through a sanitized bath to clean protective boots as they enter the food prep area 	[3]	3 x 1 mark Answers must be related to personal hygiene. Do not accept Clean all surfaces/equipment/utensils before and after working with food Do not allow "wear correct clothing" or "wear a white apron" unless qualified with "clean" Do not allow "handle foods with a cold or flu"
1	(b)		<ul style="list-style-type: none"> Cheesecake on the top shelf/high shelf/above the meat Raw chicken below the cheesecake Salad in the salad drawer 	[1] [1] [1]	3 x 1 mark The meat must be below the cheese cake (this will give 2 marks) Do not accept chicken in the salad drawer
1	(c)		<ul style="list-style-type: none"> Refrigerator at 5°C Freezer at -18°C 	[1] [1]	2 x 1 mark

Question Number			Expected Answers		Additional Guidance
1	(d)		<p>State two ways to prevent cross contamination in the kitchen</p> <ul style="list-style-type: none"> • Different coloured chopping boards/changing chopping boards • Keep raw foods separate from cooked foods • Use separate knives for raw and cooked foods/wash knives between jobs/wash frequently • Keep high risk foods in a separate working area • Clean work surfaces /equipment/utensils thoroughly after each job • High risk foods prepared in a separate work area/refrigerator • Kitchen zoned for dairy/salad/meat • Wash hands after touching raw meat/before handling any foods 	[2]	<p>2 x 1 mark</p> <p>Do not accept repeat of the cheesecake/raw chicken and salad</p> <p>Do not accept 'store correctly'</p>
			Total	[10]	

Question Number			Expected Answers	Marks	Additional Guidance
2	(a)		State two ways the manufacturer could carry out market research <ul style="list-style-type: none"> • Questionnaire/tally charts/survey/online survey • Compare /evaluate existing products • Product analysis • Disassembly of existing products • Recipe books/books/magazines • Sales analysis/monitoring sales • Taste tests/supermarket taste testing/tasting samples • Interview /speaking to experts • Brainstorm/thought shower • Use data/sales figures 	[2]	2 x 1 mark Question asks for a 'way' Do not accept: "Internet" on its own "Tasters" unless qualified "Ask people".
2	(b)	(i)	Setting <ul style="list-style-type: none"> • Gelatine/egg 	[1]	On this occasion eggs can be credited as a correct answer for (i)/(ii)/(iii)
2	(b)	(ii)	High risk <ul style="list-style-type: none"> • Cottage cheese/single cream/double cream/eggs 	[1]	
2	(b)	(iii)	Protein <ul style="list-style-type: none"> • Cottage cheese/egg/cream 	[1]	
2	(b)	(iv)	Fibre <ul style="list-style-type: none"> • Digestive biscuits/lemon 	[1]	
2	(c)		State two different ways to increase the fibre content of the cheesecake <ul style="list-style-type: none"> • <u>Base</u>- a suitable named fruit/nuts/seeds/oat biscuits/added muesli or wholemeal cereal • <u>Topping/filling</u>- a suitable named fruit/dried fruit/nuts/seeds • <u>Decoration</u>- a suitable named fruit /nuts/seeds/dried fruits 	[2]	2 x 1 mark Do not accept "wholemeal biscuits" as digestive biscuits are wholemeal. Do not accept "brown sugar" Do not accept 'use more' of the ingredients

Question Number			Expected Answers	Marks	Additional Guidance
2	(d)		<p>Give two ways that a supermarket could promote the new cheesecake.</p> <ul style="list-style-type: none"> • Advertising/TV/magazines/newspapers/internet or any other type • Special offers/buy one get one free/price cut/offers/money off vouchers/loyalty points/part of a 'meal deal' • Posters/leaflets/banners • Taste testing/free samples/samples in store • End of aisle promotion stands. • Special claims e.g. lower in fat/sugar/higher in fibre/organic/5 a day/additive free/luxury • Celebrity promotion • Packaging/cheesecake-attractive/colourful/eye catching 	[2]	2 x 1 mark
			Total	[10]	

Question Number			Expected Answers	Marks	Additional Guidance
3	(a)		<ul style="list-style-type: none"> Raising agent/makes it rise/expands 	[1]	1 x 1 mark
3	(b)		<p><u>Appeal to young children</u></p> <ul style="list-style-type: none"> Shape/interesting shape/rolled/cut/twisted (Named or drawn) Hand held/specific size Named flavour liked by children Use of decorations/garnish/glazes States clearly the colours used in the ingredients to provide colour <p><u>New original flavour</u>(look for new exciting ingredients.)</p> <ul style="list-style-type: none"> Sun dried tomatoes/olives/cooked and continental meats/interesting cheeses/named herbs and spices/curry/chilli/chicken tikka/peanut butter Named fresh fruit e.g. Blueberries/raspberries/strawberries Named dried fruits e.g. cranberries/ apricots/mango Sensible combination of fresh or dried fruit with minimal use of chocolate/sugary sweets and icing e.g. apricot and chocolate chips cocoa and mango sultana oat with chocolate drizzle <p><u>Lower in sugar</u></p> <ul style="list-style-type: none"> Low sugar substitutes /Lite sugar/Splenda/Canderel/half sugar Reduce the quantity of sugar Reduce the quantity of sugar and use added ingredients instead e.g. dried fruit/named fresh fruit <p><u>Contributes to ‘ Eat more fruit and vegetables’</u></p> <ul style="list-style-type: none"> Uses a suitable named fruits or vegetables. 	[4]	<p>4 x 1 mark</p> <p>Carefully check that the candidate has met the specification points.</p> <p>Do not accept: “Chocolate chips/sweets/sugary components” on their own</p> <p>Do not accept nuts as the product is for young children</p> <p>Leaving out the sugar is not acceptable but using any sugar substitute is. Do not accept “sweeteners”</p>

Question Number			Expected Answers	Marks	Additional Guidance
3	(c)		Three reasons why cardboard is used <ul style="list-style-type: none"> • Easy to print on/easy to put the design on • Inexpensive/cheap material • Some can be recycled/environmentally friendly/biodegradable/can be made from recycled material • Lightweight • Could be resealed/easy to open and close • Prevents contamination • Protects the product/prevents getting squashed/broken • Easy to stack on shelves/store • Easy to transport • Any shaped packet can be made 	[3]	3 x 1 mark Cheap must be qualified Do not accept sensory qualities e.g. reference to moist/dry/fresh
3	(d)	(i) (ii)	<ul style="list-style-type: none"> • Coeliac/wheat free/gluten free • Has been prepared in a factory where nuts are used • Contains nuts • Contains milk • No artificial colouring or flavouring • Contains soya • Vegan/vegetarian • Diabetic • Nutritional data/fat content/other nutritional information • List of ingredients 	[2]	2 x 1mark Do not accept allergy advice
			Total	[10]	

Question Number			Expected Answers	Marks	Additional Guidance
4	(a)		<p>State two ways a manufacturer could use a computer in the development of a new ready meal food product.</p> <ul style="list-style-type: none"> • Researching information both primary and secondary • Producing questionnaires/surveys • Product profiles/models of design ideas • Food labels /packaging information • Recording sensory testing results/Spider diagrams/star charts • Packaging designs/nets • Nutritional analysis • Digital photography • Costing/spreadsheets • Modifying recipes • HACCP/ charts for safety checks • Presenting results • Mood board/image board • Scaling up a recipe 	[2]	<p>2 x 1 mark</p> <p>The question is about development not manufacture.</p> <p>Research must be qualified</p> <p>Do not accept manufacturing</p>
4	(b)		<p>State two advantages to the manufacturer of using a Just in Time (JIT) production process for the ready meals</p> <ul style="list-style-type: none"> • Products are made to demand therefore no wastage/stock ordered when it is needed • No space needed for storage of ingredients/products are dispatched as soon as they are produced (no storage) • Can respond to consumer demand/special occasions/seasonal. • Efficient use of equipment/machinery. • Can vary the type of product (flavour/colour etc). • Can bulk buy ingredients so save money/reduce overall cost. • Equipment can be used to make other types of products. • Staff are semi-skilled/involved in production (job satisfaction) makes full use of staff/can be more interesting for staff. • Flexibility e.g. easier to alter number in batch to meet changes from client. • Controls cash flow 	[2]	<p>2 x 1 marks</p> <p>Do not accept:</p> <p>Saves time Saves money Cheaper Quicker Faster Unless qualified</p>

Question Number			Expected Answers	Marks	Additional Guidance
4	(c)	(i)	State one advantage of continuous flow to the manufacturer <ul style="list-style-type: none"> • Only need a few staff • Inexpensive to run • Non stop 24/7/Equipment used all of the time • Repetition of skills so can employ less skilled staff/less training needed for staff • Consistent quality of products/All the products are the same • A lot of products can be made in a time scale as there is no setting up time/ a lot of products can be produced quickly/quicker to produce the product 	[1]	1 x 1 mark Do not accept: Saves time Saves money Quicker Faster Cheaper Unless qualified
4	(c)	(ii)	State one disadvantage of continuous flow to the manufacturer <ul style="list-style-type: none"> • Expensive to set up • Dedicated to one process only/cannot be adapted to make other products • If something goes wrong it can be expensive /wasteful of ingredients/expensive to repair • If the machinery breaks down all production stops • Must maintain equipment to keep the plant running/high maintenance costs 	[1]	1x 1 mark Do not accept “more expensive” (cost must be qualified)

Question Number			Expected Answers	Marks	Additional Guidance
4	(d)		<p>State two quality control checks that could be carried out by sensors</p> <ul style="list-style-type: none"> • Weight sensors/load sensors to weigh ingredients • Temperature for storage /cooking/cooling/chilling/freezing • Viscosity of mixtures • Thickness e.g. dough/pastry • Flow rates e.g. chocolate coating • Volume sensors to make sure consistent amounts are used/portion size/weight of finished products • To detect colour changes/control the colour • To detect metal/foreign bodies • To detect microbiological content/check whether the food product is safe to eat • Moisture content of products • Acidity level of products • Electronic eye to count the number of products manufactured/count into packages 	[2]	<p>2 x 1 mark</p> <p>Must state the use of the sensor</p> <p>Do not accept just the name of a sensor e.g. metal detector</p> <p>Do not accept general phrases, e.g. : Visual checks Taste testing Looking the same Same amount Same size Whether they are cooked</p>
4	(e)		<p>Explain how the use of CAD and CAM has affected the number of people employed in the food industry.</p> <ul style="list-style-type: none"> • Less jobs for less skilled/lower paid workers – this is all done by machinery controlled by computers • Highly skilled people need to use the computers – to set the systems up to start with. E.g. engineers needed – to maintain the equipment • Highly trained operators required – to ensure that the equipment is working efficiently 	[2]	<p>1 x 1 mark for simple statement 2 marks for detailed explanation which includes either 2 points or one fully explained.</p>
			Total	[10]	

Question Number			Expected Answers	Marks	Additional Guidance
5	(a)		<p>Suggest a target group for cod in batter</p> <p>Children/students/families/parents/adults/single people/elderly</p> <p>Reason</p> <ul style="list-style-type: none"> • 4 portions in a pack/multipack • Requires no preparation/no skills required • Easy for people to cook/ no skill required • Individual portions convenient for single people/elderly • Quick to cook/ • Not a lot of equipment required • Economical to buy • Can use part of pack and keep the rest frozen • Easy for a person to eat. • Easy to store in the freezer • Meets named nutritional need of the target group stated • Prefer to eat fish when it is in batter 	[1]	<p>1 x 1 mark</p> <p>The mark is for the reason only.</p> <p>Reason must relate to the target group</p> <p>Do not accept:</p> <p>Cheaper</p> <p>Faster</p> <p>Easier</p> <p>Healthier</p> <p>Quicker</p> <p>Easy</p> <p>Appealing</p> <p>unless qualified</p> <p>Do not accept 'easier to digest' as the fish is coated in batter</p>
5	(b)		<p>State two nutrients found in fish</p> <ul style="list-style-type: none"> • Protein • Vitamin A • Vitamin D • Omega 3 • Omega 6 • Group B vitamins • Fat • Calcium • Iodine • Phosphorus 	[2]	<p>2 x 1 mark</p> <p>Do not accept vitamins/minerals unless named</p>

5	(c)	<p>Give three ways that you could change this meal to make it healthier</p> <ul style="list-style-type: none"> • Cod in batter – Grill/dry fry/oven bake/make batter with wholemeal flour or skimmed milk • Remove batter/Use fish/baked/steamed/micro waved/ poached /dry fried/oven baked/use breadcrumbs • Change to oily fish • Chips – Oven cook/larger chips/potato wedges/sweet potatoes • Change chips to boiled/baked/microwave/mashed/crushed/wedges/roast/sweet potatoes/boiled rice/couscous or pasta • Add a salad/garnish/named vegetable/parsley sauce 	[3]	<p>3 x 1 mark</p> <p>Do not accept: Reduce fat Reduce salt Increase fibre</p>
---	-----	---	-----	--

Question Number			Expected Answers	Marks	Additional Guidance
5	(d)		<p>Explain the function of the batter casing.</p> <ul style="list-style-type: none"> • Protects the fish-When heated the egg coagulates/sets-preventing the fat from being absorbed by the fish during cooking. • Protects the fish from disintegrating/falling apart whilst cooking- as fish is delicate due to its structure • Improves the taste/flavour/texture by giving a crispy/crunchy coating • Improves the colour/appearance –batter is golden brown and looks appetising • Improves the satiety value-it absorbs fat takes a long time to digest - batter is mainly carbohydrate/filling • Bulks/ekes out the fish-increases the portion size/makes it more filling 	[2]	<p>1 x 1 mark for simple statement 2 x 1 mark for detailed explanation which includes either 2 points or one fully explained.</p>
5	(e)		<p>Describe one method of freezing carried out in industry.</p> <p><u>Blast Freezing</u></p> <ul style="list-style-type: none"> • Fish placed on trays i.e. fish fingers • Air is circulated around a freezing compartment – reducing temperature quickly <p><u>Cryogenic Freezing</u></p> <ul style="list-style-type: none"> • Uses liquid nitrogen (-196°C) – food passed through a tunnel • Gas is sprayed downwards – it freezes very quickly. Used on expensive foods e.g. prawns <p><u>Plate freezing</u></p> <ul style="list-style-type: none"> • Fish is placed between two plates which make contact with the food's surface – Ideal for fish fillets/boil in the bag/fish products 	[2]	<p>1 x 1 mark for correctly naming one of the methods of freezing</p> <p>2 x 1 mark for detailed explanation which includes either 2 points or one fully explained.</p>
			Total	[10]	

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

OCR Customer Contact Centre

14 – 19 Qualifications (General)

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