

MARK SCHEME for the October/November 2013 series

0648 FOOD AND NUTRITION

0648/13

(Written) maximum raw mark 100

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme IGCSE – October/November 2013	Syllabus 0648	New Y	
ion A		0040	3 × 1 mark	1
				26-
	<u>Elements in fat</u> arbon; hydrogen; oxygen;		3 × 1 mark	
	<u>/lonounsaturated fat</u> o ne double bond (carbon to carbon) in molecule			
r	nore hydrogen (one pair of atoms) can be taker			10
·	accept information in diagrammatic form)		2 × 1 mark	[2]
· · ·	<u>Polyunsaturated fat</u> nore than one double bond (carbon to carbon)	in molecule;		
	an take up more hydrogen (more than one pai accept information in diagrammatic form)	r of atoms);	2 × 1 mark	[2]
· ·	Saturated fat			L
S	ingle bonds (carbon to carbon) in molecule;			
	annot take more hydrogen; accept information in diagrammatic form)		2 × 1 mark	[2]
	h problems associated with a diet high in satura ss fat / adipose tissue stored under skin / aroun			
overw	veight / obesity;	a mornar organo,		
sticks	ated fat contains cholesterol; s to / narrows / blocks artery walls;			
	attack / CHD; stroke; hypertension; elf-esteem; breathlessness; arthritis; problems (during surgery;	3 × 1 mark	[3
				-
(d) <u>Subst</u> bile;	tance which emulsifies fat		1 mark	[1
Dile,			I IIIdIK	[1]
· / ·	products of digestion of fat			
glycei fatty a	-		2 × 1 mark	[2
	20100;			F.
	inger-like projections		4	- 4
V	illi;		1 mark	[1
	System of which lacteal is a part ymphatic system;		1 mark	[1
'y			. man	

n 2(c) r named ex blants); xample); ut squash;		2 × 1 m 2 × 1 m 1 m	ark [2 ark [2
r named ex plants); xample);		2 × 1 m	ark [2 ark [2
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r named ex plants); xample);		2 × 1 m	ark [2]
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xample);			-
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ut squash;			-
		1 m	ark [1 _.
		1 m	ark [1]
		1 m	ark [1]
protein;	1 / the is main		
vitamin B ² vitamin B2		•	
		ic acid / niacin;	
vitamin B		,	
vitamin C			
		lciferol / calcium	:
calcium;	,		,
	nloride / sa	alt / potassium;	
iron;		• • •	
iodine;			
ncy diseas	e.		
		2 × 1 m	ark [4]
	iodine;	-	iodine;

enamel / causes gum disease / bad breath; **obesity;** excess sugar converted to fat or adipose tissue; stored under skin / around internal organs / arteries narrow or block; hypertension / CHD / stroke; **diabetes mellitus;** insufficient insulin made; in pancreas; glucose remains in blood; can cause circulation / eye problems, etc.;

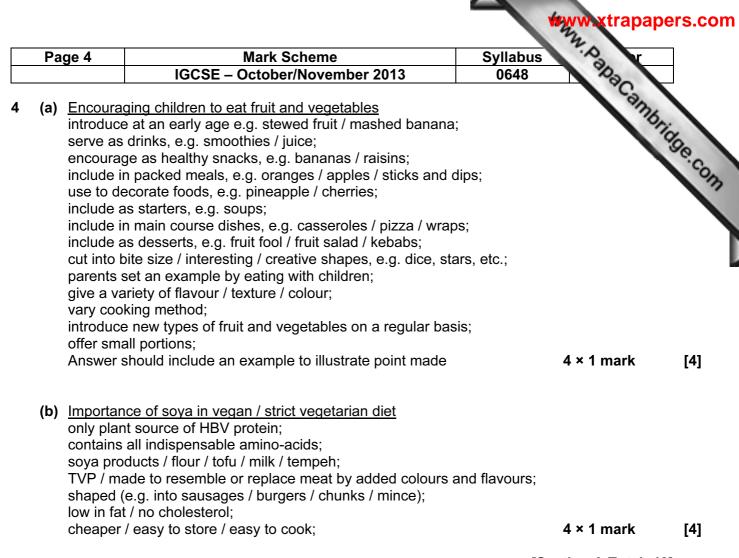
Three **named** problems **with** description

3 × 1 mark [3]

(b) Excess protein

protein cannot be stored; deamination / nitrogen removed; in liver; excreted as urea / urine; from kidneys; remainder is carbon, hydrogen, oxygen; used for energy; or stored as fat;

3 × 1 mark [3]



[Section A Total: 40]

IGCSE – October/November 2013 ection B (a) Safety when frying deep pan – enough room for oil and food – space for turning food without overflowing – pan no more than half full of oil – does not overflow when foo lower food into pan gently – to avoid splashing fat – do not overfill pan with food – danger of overflowing – do not overheat fat – monitor temperature of fat – may ignite make sure food is dry – water turns to steam and splutters –	9 — -	nbru
(a) Safety when frying deep pan – enough room for oil and food – space for turning food without overflowing – pan no more than half full of oil – does not overflow when foo lower food into pan gently – to avoid splashing fat – do not overfill pan with food – danger of overflowing – do not overheat fat – monitor temperature of fat – may ignite make sure food is dry – water turns to steam and splutters –	9 — -	mbrie
 deep pan – enough room for oil and food – space for turning food without overflowing – pan no more than half full of oil – does not overflow when fool lower food into pan gently – to avoid splashing fat – do not overfill pan with food – danger of overflowing – do not overheat fat – monitor temperature of fat – may ignite make sure food is dry – water turns to steam and splutters – 	9 — -	Stre
make sure equipment is dry – danger from splashing – pan handle turned in – in case it is knocked over – back burner if possible – less chance of being knocked over flat base on frying pan – so it sits securely on hotplate – do not leave unattended – may ignite / overflow – turn heat off if fat begins to smoke – fat is near flash point – have cover / lid nearby – in case of fire – do not move pan when fat is hot – oven gloves when holding pan handle – may be hot / fat may pan should fit burner / flame should not lick around edge of p		
MARK BANDSHighgood understanding including 8 or more pointsMedium some understanding and 4–7 pointsLowlittle understanding, has mentioned 1–3 points	Marks 4–5 2–3 1	
(b) Personal hygiene in the kitchen wash hands – before/after handling all foods / after toilet / – to avoid cross-contamination – do not cook if ill / no coughing / sneezing over food – so back not passed to others – tie back / cover long hair – bacteria from hair could get into find no long fingernails – dirt / bacteria collect underneath – remover remove rings – clean apron / no outdoor clothes – to avoid transfer of bacteria do not touch face/body during food preparation – bacteria from cover cuts/wounds with waterproof dressings – bacteria coul no licking spoons / fingers – bacteria from mouth transferred handle food as little as possible – avoids transfer of bacteria	ood – ove nail varnish – ria from outside – om skin could get onto food ld get into food – I to food –	[5]
MARK BANDS High good understanding including 8 or more points Medium some understanding and 4–7 points Low little understanding, has mentioned 1–3 points	Marks 4–5 2–3 1	[5

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Mediur	n some understanding	g and 4–7 points	i	1	2–
Low	little understanding,	has mentioned	1–3 points		

[5]

Page 6	Mark Scheme	Syllabus
	IGCSE – October/November 2013	0648 73
(c) <u>Advanta</u>	ntages and disadvantages of small electrical kitchen ed	quipment R
may be n can do a attachma can be u can use need not Disadva initial cos difficult t care nee danger c	time – save labour / effort / energy – save fuel e.g. mic be more efficient / thorough – can cope with large quan to a range of jobs – blender can make soup / mayonna hments available to extend use – dough hook / whisk – be used in different containers / mixing bowl / pan – use anywhere where there is a power supply / portable not hold when in use – free-standing mixer for bread, or dvantages cost – cost of electricity to operate – may buy and not ult to assemble – may be difficult to clean – needed not overfill liquidiser – danger of burns with hot er of sharp blades – do not use near water – caution ne ric shocks – specialist to repair – added cost –	ntities – nise / breadcrumbs – - cake mixture – use – t equipment –
	suitable storage space – must use where no-one will the	rip over trailing flexes –
High Medium Low	K BANDS good understanding including 8 or more points um some understanding and 4–7 points little understanding, has mentioned 1–3 points full marks must include both advantages and disadvant	Marks 4–5 2–3 1 tages)
equipme vary colo vary flav vary text meals sh cost – e. season - availabili skill of co time ava likes and health – allergies ages of p activity / occasion consider number	te / time of year – e.g. hot meals in cold weather – oment available – e.g. may need freezer for dessert / sp colour – e.g. not mince and potatoes followed by chocc flavour – e.g. not fish with lemon sauce followed by lem texture – e.g. avoid pastry in two courses / do not repeat s should be attractive – e.g. use garnishes / decoration – e.g. use LBV protein / eggs / cheap cuts of meat – on – e.g. use fruit and vegetables in season when they ability of food – e.g. use left–overs / garden produce / lo of cook – e.g. may not know how to make choux pastry available – e.g. may need to use quick methods / conve and dislikes – e.g. avoid food / flavours not enjoyed – h – e.g. low fat / low sugar / low salt – gies – e.g. nuts / lactose / gluten – of people taking meal – e.g. old may need easily diges ty / occupation – e.g. manual workers may need greate sion – e.g. birthday party / packed meal / Christmas lun der whole meal – e.g. not an elaborate first course ther per to serve – e.g. quantity required to have enough foc on – e.g. Hindus do not eat beef / Jews do not eat pork	blate dessert – non meringue pie – at cooking methods – ns / colourful vegetables – are cheaper – ocal produce / shops – - enience foods – er quantity of food – nch / breakfast / supper etc. – n simple dessert – od / to avoid waste –

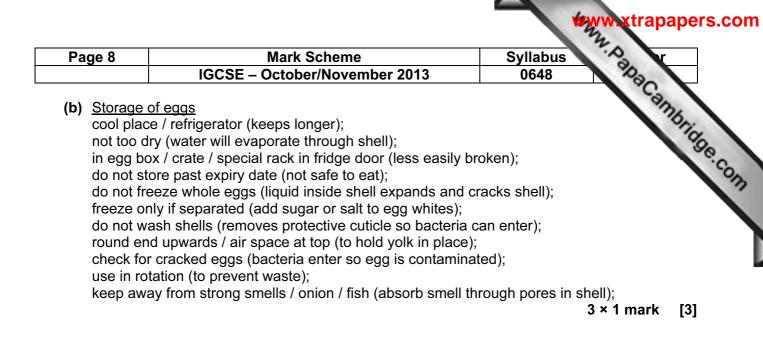
IGCS	Mark Scheme	Syllabus	
	E – October/November 2013	0648	
Noolo for toopogo girl		Syllabus 0648 mones / repair; e of blood / prevent anaemia;	
 Meals for teenage girls HBV protein 	s growth spurt / production of horr		26
iron	menstruation / increased volume	e of blood / prevent anaemia:	10
Vitamin C	absorption of iron;		
calcium	bone growth;		
Vitamin D	absorption of calcium;		
starch / fat	energy;		
Vitamin B	release energy from carbohydra	ates;	
do not credit nutrient v	without function	4 × 1 mark	[4]
batch bake – can use use only the hob for m reduce size of flame – use pressure cooker – lids on pans – reduces do not overcook food cut potatoes into smal do not preheat oven m switch off burners whe switch off electric over	 ller pieces – less cooking time – less nore than 10 minutes – switch off wh en not in use – n before end of cooking – use residu of food required – to avoid reheating 	l later – s of pan – ker – use a slow cooker – s fuel – nen not in use – ual heat –	

MARK BANDS	Marks	
High good understanding including 8 or more points	4–5	
Medium some understanding and 4–7 points	2–3	
Low little understanding, has mentioned 1–3 points	1	[5]

7 (a) <u>Nutrients in eggs</u>

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protein; (or named e.g. ovalbumin / mucin / vitellin) – growth / repair / energy / hormone production; fat; energy / insulation / warmth / fat-soluble vitamins / protection of internal organs; Vitamin A / retinol; visual purple / night vision / mucous membranes / skin / growth; Vitamin D / cholecalciferol; absorption of calcium / bones and teeth; Vitamin B2 / riboflavin (or Vitamin B); release of energy from nutrients; iron; haemoglobin / transport of oxygen / cell respiration / prevent anaemia; phosphorus; bones and teeth; 3 nutrients 3 functions 3 × 1 mark



(c) Uses of eggs with examples main dish / breakfast / snack; trapping air / making mixtures rise; lightening; thickening; setting; emulsifying; binding; coating; glazing; enriching; garnishing; adding colour; 2 uses 2 examples

omelette, boiled, scrambled, poached egg; Swiss roll, sponge flan; mousse, meringue, soufflé; custard, sauces, soup etc.; quiche, rich cakes, baked egg custard; mayonnaise, rich cakes etc.; croquettes, fish cakes, stuffing, rich pastry; Scotch eggs, fish fillets; pastry, bread; sauces, milk pudding, soup; sliced hard-boiled egg on salad; pastry, cakes;

2 × 1 mark 2 × 1 mark [4]

(d) Changes when an egg is boiled

egg white thickens / changes from transparent to opaque; protein coagulates / sets / solidifies / hardens; becomes rubbery / indigestible if overcooked; yolk thickens; yolk becomes powdery when overheated; green ring forms around yolk (iron / sulphur reaction);

2 × 1 mark [2]

[Section B Total: 45 marks]

				2.
	Page 9	Mark Scheme	Syllabus	· Part
		IGCSE – October/November 2013	0648	No.
8	· /	cidents in the home occur in the kitchen. Disc and ways of prevention.	uss reasons	Cambrid
	The answ	wer may contain the following knowledge and info	rmation.	3e.co.
	<u>Knives</u> store out	of the reach of children –		777

trapapers.com

8 (a) Most accidents in the home occur in the kitchen. Discuss reasons for this and ways of prevention.

Knives

store out of the reach of children store in sheath or knife block or with cork on point keep separate from other cutlery keep well sharpened - blunt knives can slip and cause injury use on a chopping board - do not cut on palm of hand cut away from the body use size and knife appropriate to task carry with blade pointing down towards the floor wash individually - do not put into washing up water with other cutlery wash with back of knife towards hand (also dry this way) -

Deep frying

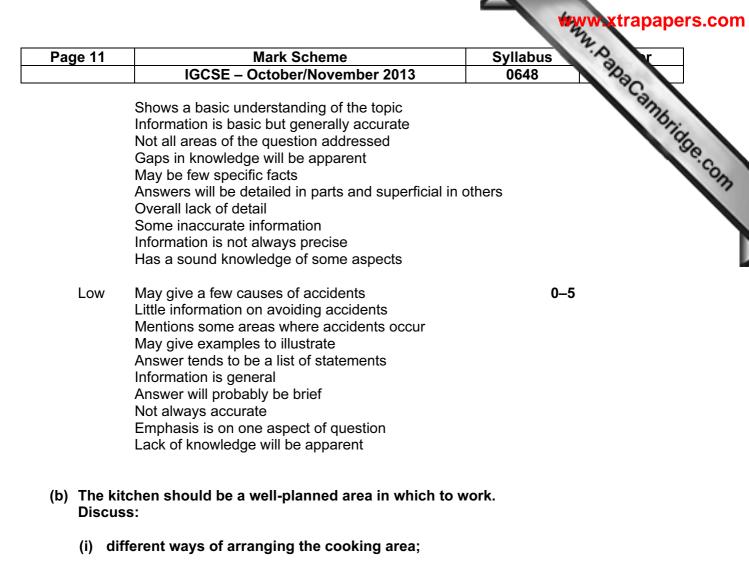
pan not more than half full - prevent overflowing when food is added dry food before adding to fat - water turns to steam - spits dry utensils - wooden handles on pans / utensils - poor conductor of heat prevents burning hands pan should have a flat base - does not wobble on hotplate do not overfill pan with food - may overflow do not overheat fat - may ignite - have lid nearby - cover if ignites prevents oxygen reaching flames - do not move pan if on fire no water nearby - e.g. kettle - water may splash into fat causes spitting - do not leave unattended - do not allow children to fry make sure dangers are understood - turn off heat after use do not move pan until fat is cold - monitor temperature of oil use electric deep fat pan - temperature thermostatically controlled -

Electrical equipment

plugs should be wired correctly - if not do not use - use a professional to do it do not attempt to wire unless sure of method - no bare wires do not use near flames - will melt covering and expose wires do not stretch / put strain on wire during use keep appliances to back of bench - out of reach of children do not leave flexes hanging where they could be tripped over use of coiled flexed prevents trailing wires use correct fuse for appliance plug should not be broken e.g. no screws missing do not touch with wet hands switch off appliance at socket before removing plug do not overload socket by using adapters follow manufacturer's instructions do not put motor near water when washing up wipe with damp cloth when unplugged keep hands / fingers away from blades when using and when washing up - safer to use a brush to clean blades -

Pag	ge 10	Mark Scheme	Syllabus
		IGCSE – October/November 2013	0648
	<u>Other p</u>	oints	Syllabus 0648 S etc. – removing lid of steamer
		dles turned in – use pan guard –	
	steam fr	om kettle pointing towards wall –	
		oves to remove items from oven / hold pan handles	s etc. –
		ce away from pan / tilt lid away from worker when r	emoving lid of steamer
		rolled up / ties tucked in / no loose clothing –	h aguinmant / actab fira
		back / covered – in case they become tangled wit gh heels / open sandals / slippers –	n equipment / catch life
		spills immediately –	
		e mats / torn lino / broken floor tiles in kitchen – cau	use tripping –
		or area clear – do not have highly polished floor– r	
	•	aning materials away from food – not in empty foo	od containers – label –
		ire tops cannot be removed by children –	
		lace other liquids in empty soft drink bottles –	
		tore heavy items on high shelves – acking equipment where it could fall –	
		tore items used frequently where they cannot be re	eached easily –
		nen stool or chair to reach high cupboards / shelve	
		ang tea towels near cooker –	
		ins near cooker –	
	do not r	un – actly what you are doing at all times – read / unde	retand instructions
		cloths hanging – small children can pull them down	
	well lit k		II —
		e when using pressure cooker –	
		e in kitchen at all times / keep focused –	
		ect equipment for job e.g. don't use a knife to oper	n a can –
		nned kitchen layout to avoid excess movement –	
		ff cooker / appliances when finished – se metal in a microwave –	
		electrical appliances regularly –	
		pboard doors / ovens closed –	
	arrange	oven shelves before heating to prevent burning ha	ands –
(a)	Band	Descriptor	Part mar
	High	Can identify many causes of accidents	11–15
	2	Suggests ways to avoid accidents	
		Is able to identify and discuss several areas when	e
		accidents occur	
		Gives examples to illustrate points made	
		Answers are detailed where appropriate Understanding of the topic is apparent	
		Information is specific	
		Information is usually accurate	
		All areas of the question addressed	
		Some specific facts included and the topic is	
		addressed in its widest application	
			0.40

Middle Some causes of accidents identified May give some advice on avoiding accidents Is able to identify a few areas where accidents occur Some discussions or explanations given Gives a few examples to illustrate points made 6–10



[15]

(ii) the choice of kitchen surfaces.

The answer may contain the following knowledge and information.

(i) Arranging the cooking area

has to accommodate sink – cooker – refrigerator – storage space – work surfaces – equipment should be in a logical order – ergonomic – work triangle – to form a continuous working area – to suit sequence of working – food storage \rightarrow preparation \rightarrow cooking \rightarrow serving \rightarrow clearing up – arrangement should not waste time – and energy – moving about from one area to another – excessive bending and stretching avoided – in order to use equipment – U-shaped – L-shaped – galley / parallel lines plan / island – (can show on diagrams) work surfaces on either side of cooker – sink – and refrigerator – cupboards / refrigerator etc. under work surface – space to put dishes from oven – or dishes after being washed – or space to prepare dishes near cooker –

(ii) Kitchen surfaces

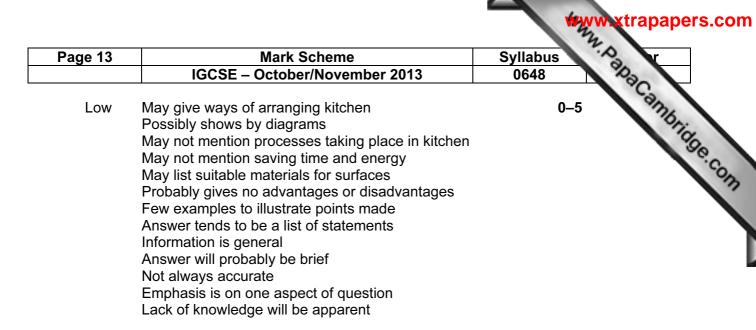
worktops needed on either side of sink – and hob – to give a continuous work surface – avoid carrying hot pans – sinks and hobs can be fitted into worktops – for smooth flow of surface – should be at a comfortable height for working – to avoid stretching – or stooping – should be no gaps between surface and equipment – behind sink – or where work surface meets walls –

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Page 12	Mark Scheme	Syllabus	2
	IGCSE – October/November 2013	0648	No.
car ma sm sta ofte less pro wa avo pla floo clay wa	ich would trap food – and attract bacteria – contamir n be made of plastic / Formica covering chipboard / v rble – granite – stainless steel – wood – ceramic tile ooth – hard-wearing – easy to clean – heat-resistant in-resistant – resistant to household cleaning agents en made with a rolled edge – more comfortable to le s likely to chip – colour to suit décor of kitchen – tect surface from damage – avoid burning plastic / s lls must be easy to clean – withstand moisture / con- bid gloss paint to reduce condensation – cool colour stic / vinyl coated wallpapers – attractive – easy to co or should not be slippery – not damaged by water – e y tiles – linoleum – no loose mats – danger of trippin sh surfaces with hot, soapy water – to remove food a d prevent attracting insects etc. – sugar attracts ants nove food which could stain quickly – e.g. curry sauce	scorching wood – densation – – change – easy to clean – ng – and grease –	apacambridge.com
(b) <u>Band</u>	Descriptor	Part mar	<u>k Total</u>

HighCan identify at least 2 ways of arranging kitchen1May illustrate with diagramsIdentifies processes taking place in kitchenKnows that time and energy are savedGives examples to illustrate points madeAnswers are detailed where appropriateConsiders materials for most kitchen surfacesGives advantages of materials chosenUnderstanding of the topic is apparentInformation is specificInformation is usually accurateAll areas of the question addressedSome specific facts included and the topic is addressed in its widest applicationMiddleCan identify at least 1 way of arranging kitchen6

6 - 10May illustrate with diagrams May identify processes taking place in kitchen Possibly mentions saving time and energy Considers some materials for kitchen surfaces Little further information May give examples to illustrate points made Shows a basic understanding of the topic Information is basic but generally accurate Not all areas of the question addressed equally Gaps in knowledge will be apparent May be few specific facts Answers will be detailed in parts and superficial in others Overall lack of detail Some inaccurate information Information is not always precise Has a sound knowledge of some aspects



[Section C Total: 15]

[Total for Paper: 100]