
General Certificate of Secondary
Education

**Home Economics: Food and
Nutrition**

45851

Mark scheme

4585

June 2013

Version/Stage: Final

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from aqa.org.uk

Question 1

Question	Part	Sub Part	Marking Guidance	Mark	Comments
1	a		Helps body remove waste/prevents constipation Helps prevent skin drying out/Good for skin Needed for all body fluids (digestive juices, blood, sweat, tears, urine) Helps absorption of nutrients Provides a means of transport/medium for dispersing nutrients and / or enzymes Provides a medium for chemical reactions to take place Vital to life/would die Prevents dehydration/keeps you hydrated Regulation of body temperature	2	1 overall mark for body fluids
1	b		Any named fruits e.g. melon, citrus fruits Any named vegetables Soups Sauces e.g. gravy, custard Named drink Jelly	3	Must give different examples e.g. not 2 citrus fruits Credit can be given to different named fruit and vegetables Accept one named soup/sauce/drink
1	c		Strengthens teeth by combining with enamel coating / hardens tooth enamel/keeps teeth strong Makes teeth more resistant to attack by acids Helps prevent tooth decay/stops teeth rotting	2	Or words to that effect
1	d		Calcium Sodium Potassium Magnesium Iodine	1	Any 1 from the list given

Question 2

Question	Part	Sub Part	Marking Guidance	Mark	Comments
2	a		Protein – more in cheese than oat biscuits Sugar – oat biscuit contains more than cheese Fat – more in cheese Fibre – more in the oat biscuit Salt – more in the cheese biscuit.	5	One point for each nutrient mentioned but must show a comparison to get the mark. Maximum 5
2	b		Low in fat/fat content Low in sugar/sugar content Avoid empty calories Low in salt / sodium/check salt content Avoid nuts Include fruit and vegetables/counts towards five a day	3	Credit any 3 examples from list
2	c		Starchy foods contain other nutrients e.g. B vitamins Not empty calories Slow releasing energy/ keeps blood sugars level / low GI/alternatively sugar is high GI/releases energy quickly Help you feel fuller for longer Less chance of tooth decay	3	
2	d		Overweight / obesity (Type 2) diabetes Coronary heart disease Tooth decay High blood pressure	3	

2	e	<p>Eat more fibre/ or credit any examples of high fibre foods E.g. pulses – peas, beans lentils Wholemeal bread Wholegrain cereals e.g. rice, pasta Baked potato with skin Dried fruits- apricots, dates, figs Any named vegetable/Any named fruit Increase water intake High fibre breakfast cereals e.g. porridge, muesli, Weetabix, Allbran, etc Nuts</p>	2	<p>Must give different examples to gain a mark e.g. do not credit two breakfast cereals/pulse</p>
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Question 3

Question	Part	Sub Part	Marking Guidance	Mark	Comments
3	a		More multi-cultural restaurants/takeaways e.g. Chinatown Supermarket aisles are devoted to different ethnic ingredients e.g. Italian, Indian etc./more choice available Ethnic supermarkets Specialist shops e.g. Polish Supermarket ready meals/sauces	2	
3	b		Carbon footprint – amount of CO ₂ we produce every year/greenhouse gas/methane emissions	1	
3	c		Reduce amount bought / buy less Buy items in re-cycled packaging Buy packaging which can be recycled Choose energy efficient applications Repair equipment rather than buying replacements Buy foods in season/ Buy from local sources Use Farmers markets Grow your own fruit and vegetables Don't buy bottled water Shop less often/order online, save fuel Reduce consumption of meat (methane) Recycle bags – use own shopping bags/bags for life etc.	3	The list is not exhaustive Credit any valid reference to shopping
3	d		Pre-packaged goods must show the exact weight and contents on the packaging Scales used to weigh loose goods must be accurate Traders can be prosecuted if scales are not accurate Some foods must be sold in pre-determined sizes e.g. butter	2	

Question 4

Question	Part	Sub Part	Marking Guidance	Mark	Comments
4	a	(i)	RNI Reference Nutrient Intake An amount of a nutrient that is enough or more than enough for approximately 97% of a population group	2	1 mark for simple response 2 for accurate description
4	a	(ii)	DRV Dietary Reference Value Overall term used to cover EAR, LRNI and RNI	2	1 mark for simple response 2 for accurate description
4	a	(iii)	EAR Estimate Average Requirements Average needed for any group of people but some people will need more and some will need less	2	1 mark for simple response 2 for accurate description
4	b		18g	1	Must include correct unit
4	c		Protein 15% Fat 35% Carbohydrate 50%	3	

Question 5

Question	Part	Sub Part	Marking Guidance	Mark	Comments
5	a		Vitamin B12 Calcium Iron Vitamin D Fibre Vitamin C	2	
5	b		Change crisps to a healthy snack e.g. unsalted nuts - to eat less salt Change chips to jacket potato – to eat more fibre/less fat Change chips to salad - to eat less fat / increase fibre Change from high sugar to high fibre breakfast cereal - to eat less sugar/more fibre Fruit juice at breakfast, more vegetables with meal, salad with pizza, fruit as snacks – eat more fruit and vegetables/fibre/5 a day Change fizzy drinks to water/milk – to lower sugar	8	Suggestions are not exhaustive. 4 marks for suggestions of meal changes and 4 marks for reasons.
5	c		Diet and health reasons (not to lose weight) Concerns about animal welfare Don't like the taste / texture of meat Peer pressure Family reason Religious or cultural reasons	3	3 different reasons
5	d		Quorn Tofu Soya /TVP Pulses – peas, beans, lentils Nuts	2	Credit any 2 suitable alternatives to meat

Question 6

Question	Part	Sub Part	Marking guidance	Mark	Comments
6	a		3 for 2 offers/special offers Giant sized trolleys Free samples Smell of freshly baked bread Music and lighting Product placement – eye level/ end of aisles Expensive items first, cheaper products at the end Pricing - £3.99 sounds cheaper than £4.00 Point of sale items Leaflets and free newspapers/ TV advertising	4	
6	b		<p>Storage</p> Put it straight into the refrigerator or freezer when you get home Follow instructions regarding fridge and/or freezer If freezing, freeze on the day of purchase Do not refreeze once thawed Check date stamp, do not store longer than recommended	4	Allow 2 marks for storage and 2 for cooking
			<p>Cooking</p> Follow cooking instructions regarding microwave/oven Use correct temperature/power output Cook for correct time Include standing time if microwaved Re-heat once only Re-heat until piping hot / 72°C		
6	c		Fibre Texture/colour Vitamin C Balances the eat well plate/contributes one portion of five a day	2	

6	d	<p>May be blind tasting Use at least 4 tasters Do not allow tasters to discuss results Provide glasses of water in order to clear palate between tastings Serve lasagnes on identical plates Label with a code so that tasters do not know which lasagne is home-made Record using: Table with comments Triangle test Rating test Ranking test Identical portion size Star profile</p>	<p>Criteria Bands</p> <p>1-2 marks A simple description with limited reference to procedures.</p> <p>3-4 marks Satisfactory description identifying some procedures.</p> <p>5-6 marks Comprehensive description identifying a good range of procedures. For maximum marks they must refer to at least one type of test.</p>
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Question 7

Question	Part	Marking guidelines			Mark	Comments										
7	a	Suitable temperature / warm conditions / 37°C Moisture / damp Food supply Correct ph / ph 7 / neutral conditions Time Oxygen			3	Credit three different examples from list										
7	b	<table border="1"> <thead> <tr> <th>Bacteria</th> <th>Food source</th> <th>How to prevent food poisoning</th> </tr> </thead> <tbody> <tr> <td>Salmonella</td> <td> Raw meat, poultry/chicken and eggs Cooked meat Dairy foods Cheese Mayonnaise Bean sprouts </td> <td> Wash hands after handling raw meat, eggs etc. Hard boil eggs/ avoid lightly cooked or raw eggs Defrost chicken before cooking Cook meat, poultry / chicken thoroughly Boil bean sprouts before use </td> </tr> <tr> <td>Listeria</td> <td> Unpasteurised soft cheeses Cook chill ready meals Pate </td> <td> Avoid during pregnancy Keep refrigerator below 4°C Check use by dates </td> </tr> <tr> <td>Bacillus cereus</td> <td> Cooked rice Herbs and spices Starchy food products </td> <td> Do not re-heat rice dishes Cool cooked rice immediately after cooking when making salads etc. Do not keep herbs and spices past use by date </td> </tr> </tbody> </table>	Bacteria	Food source	How to prevent food poisoning	Salmonella	Raw meat, poultry/chicken and eggs Cooked meat Dairy foods Cheese Mayonnaise Bean sprouts	Wash hands after handling raw meat, eggs etc. Hard boil eggs/ avoid lightly cooked or raw eggs Defrost chicken before cooking Cook meat, poultry / chicken thoroughly Boil bean sprouts before use	Listeria	Unpasteurised soft cheeses Cook chill ready meals Pate	Avoid during pregnancy Keep refrigerator below 4°C Check use by dates	Bacillus cereus	Cooked rice Herbs and spices Starchy food products	Do not re-heat rice dishes Cool cooked rice immediately after cooking when making salads etc. Do not keep herbs and spices past use by date	6	One mark for a correct food source and one mark for a way to prevent food poisoning. Candidates must give different responses. Do not credit the same response twice. Need to have a correct source to have way of preventing credited
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7	c	Hygienic practices	Reason	6	<p>This is not an exhaustive list and we would not expect candidates to give all these responses.</p> <p>Criteria Bands</p> <p>1-2 marks Answer may be muddled and information superficial. A limited number of hygiene points included and no reference to why these should be followed.</p> <p>3-4 marks Answer will be fairly well organised. A satisfactory number of hygiene points mentioned with some justification for them. Some use of relevant terminology and satisfactory communication skills.</p> <p>5-6 marks A well organised answer. A good range of hygiene points and good explanation as to why these should be followed. Good use of terminology such as bacteria, cross contamination etc.</p>
		Wash hands before cooking	Prevents transfer of bacteria from hands to food		
		Do not wear nail varnish	This can chip and contaminate food		
		Keep fingernails short	Dirt and bacteria can become trapped under nails		
		Do not wear rings	Small bits of food can become stuck in decorative parts of the ring – build-up of bacteria		
		Do not cough or sneeze over food	Mucous from nose and throat contain bacteria		
		Wear an apron	Outdoor clothing can contain bacteria		
		Tie hair back	Loose hair may fall into food. Bacteria are present in hair		
		Cover up cuts and sores	Bacteria is present in open wounds		
		Use blue plasters	These can be seen in food if they fall off Prevent bacteria transferring to food		
Use different chopping boards for different ingredients	This prevents cross contamination				
Use clean equipment	Prevents cross contamination				

Question 8

Question	Marking Guidelines	Mark	Comments
8	<p>Eggs When eggs are heated they coagulate 60°C for egg white Egg white becomes solid and opaque 70°C for egg yolk Egg yolk becomes dry and hard Denaturation occurs Protein gradually sets The higher the temperature the harder the egg becomes</p> <p>Roux sauce Gelatinisation As the flour and milk mixture is heated (60°C - 80°C) the starch grains soften and absorb water Starch grains begin to swell. They break. The sauce begins to thicken Usually takes place at 85°C If left to go cold the sauce will become solid (forming a gel)</p> <p>Green leafy vegetables Loss of water soluble vitamins (thiamine and ascorbic acid) as they leach out into water. Vitamin C is readily oxidised at high temperatures and long cooking times Colour changes. Chlorophyll becomes a bright green but if overcooked turns olive green/brown Changes in texture as cellulose softens Texture becomes softer If overcooked vegetable become limp</p>	12	<p>Criteria Bands</p> <p>1-4 marks Answer may be muddled and information superficial. A limited number of points made on the changes occurring when heat is applied. Little or no use of terminology.</p> <p>5-8 marks Answer will be fairly well organised. A range of points made which demonstrates a satisfactory understanding of the changes occurring when heat is applied. Some use of relevant terminology and satisfactory communication skills.</p> <p>9-12 marks A well organised answer which is clearly presented. A good range of points referring to colour, taste, texture and nutritive value as relevant. Specialist terms used accurately. Candidate can spell, punctuate and use the rules of grammar well.</p>