

GCSE

Home Economics (Food and Nutrition)

Unit **B003**: Principles of Food and Nutrition

General Certificate of Secondary Education

Mark Scheme for June 2015

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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.

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Annotations

Annotation	Meaning
	Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
	Caret sign to show omission
	Cross
	Level 1
	Level 2
	Level 3
	Level 4
	Repeat
	Noted but no credit given
	Tick

MARK SCHEME: FORMAT 1 (autotext: f1)

Question			Answer	Mark	Guidance
Question 1					
1	a	i	<ul style="list-style-type: none"> 1.2g 	1x1 1	Candidates must write "g" or "grams" to be awarded the mark
		ii	<ul style="list-style-type: none"> Recommended Daily Allowance 	1x1 1	
		iii	<ul style="list-style-type: none"> 15% 	1x1 1	Candidates do not have to state "%" or "percentage" to be awarded the mark
		iv	<ul style="list-style-type: none"> For strong bones For strong teeth To prevent rickets To enable blood to clot To prevent tetany 	2x1 2	Do not accept "osteoporosis" or "osteomalacia" as the question asks about children unless qualified. Accept description of tetany (correct functioning of muscles and nerve)
		v	<ul style="list-style-type: none"> In the fridge/chill cabinet 	1x1 1	Accept below 5°C

Question	Answer	Mark	Guidance
Question 1			
b	<ul style="list-style-type: none"> • No artificial sweeteners/flavours – artificial sweeteners are not natural, and contain chemicals that affect the body/health. They have also been linked to cancers, and increased energy intake later in the day. • Low in carbohydrate – Carbohydrates contain a lot of energy (4kcal/g). Carbohydrates are often sugars so increase blood sugar rapidly. One of the healthy eating guidelines is to reduce simple carbohydrate intake. • Low in sodium – Sodium is linked to high blood pressure/heart disease and one of the healthy eating guidelines is to cut down on sodium/salt intake. • Low in fat/skimmed milk – One of the government guidelines is to reduce fat intake. Low in energy/calories. • Contains calcium - good for developing strong bones and teeth (in children). Prevents rickets, osteoporosis and oateomalacia. • Non carbonated – carbonated drinks can reduce absorption of some vitamins and minerals. • Contains protein – needed for growth and development Essential for repair and maintenance of cells (adults). Good source of protein. • Nutrients in milk are in a readily available form - milk is the single most complete food. 	3x2 6	<p>Do not accept “no e-numbers, which are linked to poor behaviour” as there is no/limited evidence – it has been linked to processed foods rather than specific e-numbers.</p> <p>Do not accept reference to government healthy eating guidelines more than TWICE.</p> <p>Reference to “low in calories/energy” can only be credited once.</p> <p>Mark top to bottom, left to right.</p>

Question		Answer	Mark	Guidance
Question 1				
1	c	<ul style="list-style-type: none"> • Powdered/dried • Evaporated • UHT/long-life • Condensed 	3x1 3	Do not accept “tinned/canned” unless qualified
	d	<ul style="list-style-type: none"> • To enrich with or add minerals/vitamins/nutrients to a food product/adding nutritional value 	1x1 1	
	e	<ul style="list-style-type: none"> • Ingredients – too see if there are any ingredients/named ingredient they do not like or are allergic too. • Special diets – E.g. looking at calorie or fat content for a weight loss diet. Vegetarian/diabetic. • Preparation – to see how to prepare the product, may have limited cooking skills. • Cooking – to see how to cook the product correctly to prevent food poisoning. • Storage instructions – to see how the product should be stored to maximise shelf life and/or prevent food poisoning. • Portion size – too see the suggested portion size per person. • Serving suggestions – some packaging shows a picture of a possible dish or way to serve. This would add variety in the diet. • Nutritional considerations – someone may want to increase/decrease their intake of one or more nutrient (healthy eating guidelines). • Comparing products – to see which product is higher or lower in a particular nutrient. 	2x2 4	<p>Candidates can ‘mix and match’ answers as long as they make sense they should be credited.</p> <p>“Sell by date” can be accepted although no longer current.</p>

Question	Answer	Mark	Guidance
	<ul style="list-style-type: none">• Use by dates/best before date – to reduce the risk of developing food poisoning and or to ensure the product will last. To show the consumer when the product is at its best (tastes best).• Weight of a product – Is it enough for their needs? A single person may look for smaller packets to avoid waste/add variety in their diet.• Country of origin – so they know where the product is from/food miles/supporting local• Treatments -eg UHT, freeze dried etc• Manufacture contact details – for complaints or questions		

Question		Answer	Mark	Guidance	
Question 2					
2	a	<ul style="list-style-type: none"> • Protecting the fish (from the hot oil) • Keeping the fish together • Give/adds texture (crispy) • Give/add flavour/tastes better • Give/add colour • Prevent fish overcooking 	1x1 1		
	b	<ul style="list-style-type: none"> • Add a portion of vegetables (i.e.) mushy peas,/salad/baked beans • Do not add salt/use an alternative to salt • Do not have battered fish/have plain fish • Change the fish to oily fish • Change the batter to breadcrumbs/oats • Make the dish at home • Oven bake/oven cooked/grill/poach/steam the fish • Oven bake/fatless fry the chips • Have chunky/wedges chips • Have potatoes in another form eg jacket, boiled, mashed • Use wholemeal flour (in batter) • Use semi skimmed/skimmed milk (in batter) 	3x1 3	Do not accept "roast"	
	c	i	<ul style="list-style-type: none"> • Flour • Milk/water • Egg 	3x1 3	

Question		Answer	Mark	Guidance
Question 2				
	ii	<ul style="list-style-type: none"> • Toad in the hole • Pancakes/drop scones/Scotch pancakes • Waffles • Crepes • Yorkshire puddings • Fritters • Battered meats/vegetables/tempura/corn dogs • Bhaji • Doughnuts 	2x1 2	Do not accept any reference to fish
c	iii	<p>The liquid Turns to steam (due to heat) and push the mixture up/increase in volume so it rises. 1 mark for steam/heat. 1 mark for causing the batter to rise/increase in volume/expand. Softens starch grains.</p> <p>The protein It sets and helps provide structure. 1 mark for setting/coagulates/denatures/solid/firm. 1 mark for providing structure/holds batter together.</p> <p>The starch Absorbs some of the liquid and helps the mixture set/gelatinisation. 1 mark for absorbing some of the liquid/starch grains swell/burst 1 mark for helping the mixture set/gelatinisation/dextrinisation/crisp texture.</p>	3x2 6	Liquid – do not accept “Evaporates”.

Question		Answer	Marks	Guidance	
Question 3					
				Content	Levels of response
3		<p>Reasons for becoming a vegetarian</p> <ul style="list-style-type: none"> • Personal preference - Do not like the taste/texture of meat. • Ethics/morals - Do not like the idea of killing or eating animals. How reared/intensive farming. • Feel that it is better for the environment – less CO₂ /methane/ output/ less land needed for crop growth/more sustainable. • Believe it is a healthier – due to the potential to consume a lower intake of fat (saturated and trans especially), meat has been associated with many health problems. Want to avoid the hormones present in meat (e.g.) growth hormones. • Religious – certain religions are not permitted to consume some animal products. Do not credit examples. • Social and economic – Meat is expensive so choose cheaper options. • Pregnancy – Taste change or feel that it is better for the baby. 	15		<p>This question is marking according to the quality of response.</p> <p>Marks are allocated according to the quality of response. Candidates should be able to show their depth of knowledge and understanding, using correct terminology.</p> <p>In order to achieve a Level 4 response, both areas of reasons for becoming a vegetarian and how to achieve a balanced diet must be addressed in detail.</p> <p>If candidates respond by giving answers in a list, they remain in the Level 2 response.</p> <p>If a candidate does not describe or explain, but makes a list/series of points they can achieve a maximum of 8 marks.</p> <p>Level 4 (13-15)</p> <p>The candidate can demonstrate a good understanding of why some people may become vegetarian and offers a comprehensive explanation of how a vegetarian can ensure they consume a balanced diet. The information will be presented in a clear and organised way. A whole range of specialist terms are used with precision. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.</p>

Question	Answer	Marks	Guidance
Question 3			
			Content
			Levels of response
	<ul style="list-style-type: none"> Role models/media/peer pressure – pressures and influences Culture – Family traditions and upbringing. <p>How can a vegetarian achieve a balanced diet. The candidates may comment on specific nutrients and then give examples of a food/meal that would provide this. This should be credited accordingly. They may also link to the eatwell plate or healthy eating guidelines, which must also be credited accordingly.</p> <ul style="list-style-type: none"> Eat a variety of foods – Ensure they get a balance of nutrients Iron - from plant based sources iron is more difficult to absorb. Good sources include wholegrain cereals and cereal products (some are fortified with iron), dark green leafy vegetables, dried fruits, lentils, beans, seeds, egg yolk, cocoa and dark, plain chocolate, black treacle and molasses. Someone with a high iron requirement may take 		<p>Level 3 (9-12)</p> <p>The candidate can demonstrate some understanding of why someone may become a vegetarian and how a vegetarian can ensure they consume a balanced diet. Information will be offered to support the answer but in general terms with little detail. The information will be offered in a structured format. The candidate can use a range of specialist terms with facility. There may be occasional errors in spelling, punctuation and grammar.</p> <p>Level 2 (5-8)</p> <p>The candidate makes some valid comments about someone may become a vegetarian and/or makes an attempt to explain how a vegetarian can ensure they consume a balanced diet. Some information will be relevant, although may lack specific detail. The candidate uses some specialist terms, although these may not always be used appropriately. There may be errors in spelling, punctuation and grammar.</p> <p>Level 1 (1-4)</p> <p>The candidate makes vague comments about why someone may become a vegetarian and may give one or two facts about a vegetarians diet. Facts may not always relate to the contents. Answers may be ambiguous or disorganised. There will be little or no use of</p>

Question		Answer	Marks	Guidance	
Question 3					
				Content	Levels of response
		<p>supplements to reduce the possibility of developing anaemia. This would be on the advice of a doctor only.</p> <ul style="list-style-type: none"> • Vitamin C – helps with the absorption of iron, so important for them to have a high intake (plant sources of iron are more difficult to absorb). Good sources are citrus fruits/juices. • Protein – Plant sources are mainly low biological protein sources. High biological value sources include dairy products if they consume these. Mixing protein sources to get a balance of amino acids. Good sources include tofu, tempeh, quorn, beans, lentils, nuts and seeds. Plant foods are quite filling so important to ensure they get enough protein. • B vitamins – the main B vitamin they may be lacking is B₁₂. Good sources include dairy products, eggs, fortified products (soya milks, cereals, sunflower margarine), and yeast extract. 			<p>specialist terms. Errors of grammar, punctuation and spellings may be intrusive.</p> <p>0 = No response worthy of credit.</p>

Question	Answer	Marks	Guidance		
Question 3					
				Content	Levels of response
			<ul style="list-style-type: none"> • 5 a day – important for a balanced diet. This can easily be achieved from a variety of fruit, vegetables and beans. • 1.5-2ltr water per day – ensure they are hydrated and helps with concentration & part of healthy eating guidelines. • Regular meals – helps to control blood sugar/snacking/weight gain • Do not skip breakfast – skipping breakfast may lead to increased snacking/weight gain. Part of the healthy eating guidelines. • Carbohydrates – based meals on starchy carbs. Wholemeal products. Not hard to access for vegetarians. • Lower fat consumption – vegetarian diets tend to be low in fat as they are using natural products. Do not regularly buy/rely solely on ready meals or processed foods as they can be high in fat. • Limit salt intake – use alternative flavours/lo-salt. • Have a sufficient fibre intake – vegetarian diets tend to be high in 		

Question			Answer	Marks	Guidance	
Question 3						
					Content	Levels of response
			<p>fibre, so it tends not to be a problem.</p> <ul style="list-style-type: none"> • Type of vegetarian – dietary choice and how a person ensures they consume a balanced diet will depend on the type of vegetarian they are (i.e.) vegans will find it harder to consume a balanced diet. Each type of vegetarian food choices will therefore differ. 			

Question			Answer	Mark	Guidance
Question 4					
4	a	i	<ul style="list-style-type: none"> • Japan 	1x1	
		ii	<ul style="list-style-type: none"> • 500/500 per 100,000 	1x1 1	Do not accept 500,000
	b		<ul style="list-style-type: none"> • Eat a balanced diet – following the eatwell plate/more fruit & vegetables/variety. Correct amount/portion of nutrients. • Lower (blood) cholesterol level – eat less saturated & trans fat/eat more plant sterols/oats. Eat more oily fish. • Consume more fibre – eat more wholegrain products/ more fruit & vegetables/fuller for longer. • Eat less fat/saturated fat - choose low fat products/ grill/poach/steam/boil/ bake food rather than fry/trim the visible fat off foods. • Eat less sugar – excess sugar converted to fat in body. Use sweeteners instead. • Correct weight/body fat - If overweight or obese try to lose weight. Decrease alcohol consumption (extra calories). • Reduce salt intake – use low salt or alternative flavourings. Do not add extra salt/salt to food. Reduces the risk of high blood pressure/ reduces blood pressure. • Cut down on processed foods/take-aways/ready meals – they often contain high levels of salt/fat/sugar/energy which is un-needed. Also contain sodium (shop brought cakes and biscuits). 	4x2 8	<p>Do not allow marks for reference to smoking/ exercise/ stress (not dietary).</p> <p>Allow for mix and match answers but must provide different descriptions.</p>

Question		Answer	Mark	Guidance
Question 4				
c		<ul style="list-style-type: none"> • Fruit and vegetables. • Bread, rice, potatoes, pasta (and other starchy foods). • Milk and dairy foods/products. • Foods and drinks high in fat and/or sugar. • Meat, fish, eggs, beans (and other non-diary sources of protein). 	2x1 2	<p>Do not accept a named nutrient or nutrient group (i.e.) protein or vitamins & minerals.</p> <p>Do not accept “fruit” or “vegetables” own their own.</p>
d		<ul style="list-style-type: none"> • Obesity • Cancer • High blood pressure/hypertension • Diabetes • Osteoporosis • Strokes 	3x1 3	Stick to the terms on the mark scheme.

Question		Answer	Mark	Guidance
Question 5				
5	a	<ul style="list-style-type: none"> • No bruising/blemished skin/cut skin/damage • Correct texture - soft/feels firm/hard/ripeness • Good colour/not discoloured/natural colour • No mould growth • Natural/fresh smell • No moisture loss/wrinkling of skin/not wilted 	2x1 2	<p>No one word answers</p> <p>Fresh can be accepted if it is qualified</p> <p>Colour must be qualified</p>
	b	<ul style="list-style-type: none"> • Bread (or named bread) • Alcohol/wine/beer • Yoghurt (or named yoghurt) • Cheese (or named cheese) 	2x1 2	
	c	<ul style="list-style-type: none"> • Excess salt • Excess sugar • High temperatures/boiling/above 72°C • Low temperatures/freezing/freeze/frozen/refrigerated/0-5°C/-18°C • Dehydration/no water/dried • Using acids/low pH • No oxygen/no air • No food source 	3x1 3	<p>Do not accept preservation methods such as “jam making”, “CAP”, “MAP” unless qualified. We are looking for conditions</p> <p>Do not accept “temperature” on its own.</p> <p>Do not accept “fridge” or “freezer” unless temperature is qualified.</p> <p>Do not accept “cold” or “hot” unless qualified.</p> <p>Accept temperature ranges between +5°C and -18°C</p> <p>Do not accept “dry”</p>
	d	<ul style="list-style-type: none"> • Salmonella • Staphylococcus (aureus) • Bacillus cereus • Escherichia coli/E.coli • Clostridium perfringens • Listeria (monocytogenes) 	2x1 2	<p>Credit can be given if the spelling is incorrect but the terminology is correct/the meaning is clear.</p>

Question		Answer	Mark	Guidance
		<ul style="list-style-type: none"> • Campylobacter • Clostridium botulinum 		
	e	<ul style="list-style-type: none"> • Store in the fridge/0 and 5°C – Keep out of the danger zone. Do not leave at room temperature. • Store in the freezer – microorganisms are dormant. • Defrost correctly – ensure the food cooks all the way through (above the danger zone). • Do not store cooked meat near raw meat – reduce the risk of cross contamination. • Store on the bottom shelf – juices do not drip onto food below • Cook right the way through – the whole of the meat is cooked to the same temperature and out of the danger zone. Not pink in the middle/clear juices. Check temperature with a food probe. • Cook at the right temperature/ Cook for the right length of time – ensures the meat is thoroughly cooked. Cook to 72°C and above. Ensure meat is thoroughly cooked. • Wear clean clothes – risk of contamination reduced. • Wash hands – reduces cross contamination/introduction of other micro-organisms. • Use clean equipment/work surfaces – ensure no micro-organisms are present on the equipment. • Do not let pets near it – they harbour bacteria/dirt. • Do not cough, sneeze over food – introduces bacteria. 	3x2 6	<p>Answers can be mix and match as long as they make sense.</p> <p>Maximum of 2 personal hygiene points.</p> <p>Only credit reference to cross contamination once. Mark top to bottom, left to right.</p>

Question	Answer	Mark	Guidance
	<ul style="list-style-type: none"> • Cool cooked meat quickly – minimum time in the danger zone. • Keep it hot before serving – keep it above the danger zone/reduces risk of micro-organism growth. • Use left-over food within 24hrs – Any microorganisms present may grow. • Only re-heat once – minimise the number of times a food is heated/cooled therefore, in the danger zone. • Use separate utensils for cooked and uncooked meat/different coloured chopping boards - Prevent cross contamination. • Keep meat covered – to stop flies/pet hairs landing on it. 		

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